

ORAL ARGUMENT NOT YET SCHEDULED

No. 22-1337 (and consolidated case 23-1001)

**IN THE UNITED STATES COURT OF APPEALS
FOR THE DISTRICT OF COLUMBIA CIRCUIT**

THE INTERNATIONAL DARK-SKY ASSOCIATION, INC.,

Appellant,

v.

FEDERAL COMMUNICATIONS COMMISSION,

Appellee,

SPACE EXPLORATION HOLDINGS, LLC,

Intervenor.

On Appeal from an Order of
the Federal Communications Commission

**BRIEF FOR THE FEDERAL COMMUNICATIONS
COMMISSION**

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**CERTIFICATE AS TO PARTIES, RULINGS,
AND RELATED CASES**

(A) **Parties and Amici.** All parties and intervenors appearing in this Court are listed in the Brief for Appellant International Dark-Sky Association.

(B) **Rulings Under Review.** The notice of appeal challenges the following order of the Federal Communications Commission: Order and Authorization, *Space Exploration Holdings, LLC*, IBFS File Nos. SAT-LOA-20200526-00055 and SAT-AMD-20210818-00105, Call Sign S3069 (rel. Dec. 1, 2022), *reprinted at* JA16–JA89.

(C) **Related Cases.** The order under review has not previously been before this Court or any other court. Appellee is aware of no other related cases within the meaning of D.C. Circuit Rule 28(a)(1)(C).

TABLE OF CONTENTS

	Page
CERTIFICATE AS TO PARTIES, RULINGS, AND RELATED CASES	i
TABLE OF AUTHORITIES	v
GLOSSARY	xii
INTRODUCTION	1
JURISDICTIONAL STATEMENT	4
STATEMENT OF THE ISSUES	4
PERTINENT STATUTES AND REGULATIONS	5
STATEMENT OF THE CASE	5
I. STATUTORY AND REGULATORY BACKGROUND	5
A. Licensing Of Satellite Communication Services	5
B. The National Environmental Policy Act (NEPA)	10
II. FACTUAL BACKGROUND	14
A. Prior SpaceX Authorizations	14
B. <i>Viasat, Inc. v. FCC</i>	16
C. The <i>Order</i> On Review	17
1. Harmful Interference	19
2. Protection Of Astronomy And Science Missions	21
3. NEPA Review	25
a. Launch Effects	26
b. Atmospheric Effects From Reentering Satellites	28
c. Astronomy And The Night Sky	30
d. Programmatic Environmental Impact Statement	31
STANDARD OF REVIEW	31
SUMMARY OF THE ARGUMENT	33
ARGUMENT	38

TABLE OF CONTENTS (continued)

	Page
I. THE COMMISSION PROPERLY APPLIED ITS RULES IN FINDING THAT SPACEX COULD PROVIDE ITS GEN2 SERVICE WITHOUT CAUSING HARMFUL INTERFERENCE TO DISH’S DBS SERVICE	38
A. The Commission Reasonably Relied On SpaceX’s Certification That Its Gen2 Service Complies With The ITU’s Power Limits.	41
B. The Commission’s Handling Of SpaceX’s Combined Data File Did Not Violate Due Process Or The FCC’s Ex Parte Rules.	50
C. It Was Reasonable For The Commission To Require SpaceX To Obtain A Favorable Finding From The ITU Without Requiring That The Finding Be Obtained Before SpaceX Deployed Its Gen2 Service.	54
D. The Commission Did Not Improperly Subdelegate Its Decision-Making Authority To The ITU.....	58
II. THE COMMISSION REASONABLY FOUND THAT THE RECORD DID NOT SHOW THE NEED FOR AN ENVIRONMENTAL ASSESSMENT.....	64
A. The Commission Reasonably Concluded That There Would Be No Significant Effects On Astronomy And The Night Sky	65
B. The Commission Reasonably Concluded That Reentry Emissions Would Not Have A Significant Environmental Impact	71
C. The Commission Reasonably Concluded That It Was Not Required To Duplicate The FAA’s Review Of Launch Emissions	75
D. The Commission Reasonably Declined To Prepare A Programmatic Environmental Impact Statement	78
CONCLUSION	81

TABLE OF CONTENTS
(continued)

	Page
CERTIFICATE OF COMPLIANCE.....	82

TABLE OF AUTHORITIES*

Cases

<i>Aeronautical Radio, Inc. v. FCC</i> , 928 F.2d 428 (D.C. Cir. 1991).....	5
<i>Alaska Ctr. For Env't v. U.S. Forest Serv.</i> , 189 F.3d 851 (9th Cir. 1999).....	69
<i>Am. Bird Conservancy v. FCC</i> , 516 F.3d 1027 (D.C. Cir. 2008).....	70
<i>Am. Soc'y for Testing & Materials v. Public.Resource.Org, Inc.</i> , 896 F.3d 437 (D.C. Cir. 2018).....	60
<i>Am. Wild Horse Campaign v. Bernhardt</i> , 963 F.3d 1001 (9th Cir. 2020).....	67, 73
<i>Amerada Hess Pipeline Corp. v. FERC</i> , 117 F.3d 596 (D.C. Cir. 1997).....	60
<i>Animal Legal Def. Fund v. Perdue</i> , 872 F.3d 602 (D.C. Cir. 2017).....	47
<i>AT&T Corp. v. FCC</i> , 448 F.3d 426 (D.C. Cir. 2006).....	45
<i>Blanca Tel. Co. v. FCC</i> , 743 F.3d 860 (D.C. Cir. 2014)	35, 53, 54
<i>Cellular Phone Taskforce v. FCC</i> , 205 F.3d 82 (2d Cir. 2000).....	42
<i>CHM Broad. Ltd. P'ship v. FCC</i> , 24 F.3d 1453 (D.C. Cir. 1994).....	42
<i>City of New York v. ICC</i> , 4 F.3d 181 (2d Cir. 1993).....	68, 74
<i>Contemporary Media, Inc. v. FCC</i> , 214 F.3d 187 (D.C. Cir. 2000).....	43
<i>Ctr. for Biological Diversity v. FERC</i> , 67 F.4th 1176 (D.C. Cir. 2023).....	32
<i>Ctr. for Biological Diversity v. Salazar</i> , 706 F.3d 1085 (9th Cir. 2013).....	74

* *Authorities upon which we chiefly rely are marked with asterisks.*

TABLE OF AUTHORITIES

(continued)

	Page(s)
<i>DIRECTV, Inc. v. FCC</i> , 110 F.3d 816 (D.C. Cir. 1997)	8
<i>DOT v. Pub. Citizen</i> , 541 U.S. 752 (2004).....	10
<i>FCC v. Prometheus Radio Project</i> , 141 S. Ct. 1150 (2021)	31
<i>FCC v. Sanders Bros. Radio Station</i> , 309 U.S. 470 (1940).....	52
<i>FERC v. Elec. Power Supply Ass’n</i> , 577 U.S. 260 (2016).....	32
* <i>Global Crossing Telecomms., Inc. v. FCC</i> , 259 F.3d 740 (D.C. Cir. 2001).....	42, 43
<i>Globalstar, Inc. v. FCC</i> , 564 F.3d 476 (D.C. Cir. 2009)	6
<i>Kleppe v. Sierra Club</i> , 427 U.S. 390 (1976)	80
<i>La. Pub. Serv. Comm’n v. FERC</i> , 761 F.3d 540 (5th Cir. 2014)	61
<i>Leflore Broad. Co. v. FCC</i> , 636 F.2d 454 (D.C. Cir. 1980).....	42
<i>Mayo v. Reynolds</i> , 875 F.3d 11 (D.C. Cir. 2017)	32
<i>Missouri Pub. Serv. Comm’n v. FERC</i> , 337 F.3d 1066 (D.C. Cir. 2003).....	47
<i>Mobile Relay Assocs. v. FCC</i> , 457 F.3d 1 (D.C. Cir. 2006).....	52
<i>Motor Vehicle Mfrs. Ass’n v. State Farm Mut. Ins. Co.</i> , 463 U.S. 29 (1983).....	32
<i>Nat’l Lifeline Ass’n v. FCC</i> , 983 F.3d 498 (D.C. Cir. 2020)	76
<i>Nevada v. Dep’t of Energy</i> , 457 F.3d 78 (D.C. Cir. 2006).....	79
<i>New York v. Nuclear Regul. Comm’n</i> , 681 F.3d 471 (D.C. Cir. 2012).....	67
<i>Northpoint Tech., Ltd. v. FCC</i> , 412 F.3d 145 (D.C. Cir. 2005)	7

TABLE OF AUTHORITIES (continued)

	Page(s)
<i>Prof. Air Traffic Controllers Org. v. FLRA</i> , 685 F.2d 547 (D.C. Cir. 1982).....	53
<i>Rural Cellular Ass’n v. FCC</i> , 588 F.3d 1095 (D.C. Cir. 2009)	32
<i>S. Pacific Transp. Co. v. Watt</i> , 700 F.2d 550 (9th Cir. 1983)	61
<i>Schoenbohm v. FCC</i> , 204 F.3d 243 (D.C. Cir. 2000).....	42
<i>Sierra Club v. Van Antwerp</i> , 661 F.3d 1147 (D.C. Cir. 2011)	68
<i>Spectrum Five LLC v. FCC</i> , 758 F.3d 254 (D.C. Cir. 2014).....	6
<i>Teledesic LLC v. FCC</i> , 275 F.3d 75 (D.C. Cir. 2001)	6
<i>Texas v. Rettig</i> , 987 F.3d 518 (5th Cir. 2021)	60, 61
<i>Tribune Co. v. FCC</i> , 133 F.3d 61 (D.C. Cir. 1998).....	48
<i>United Keetoowah Band of Cherokee Indians in Oklahoma v. FCC</i> , 933 F.3d 728 (D.C. Cir. 2019)	10, 11
* <i>United States Telecom Ass’n v. FCC</i> , 359 F.3d 554 (D.C. Cir. 2004)	37, 58, 62, 63, 64
<i>United States v. Matherson</i> , 367 F. Supp. 779 (E.D.N.Y. 1973).....	61
<i>Utah Env’t Congress v. Bosworth</i> , 443 F.3d 732 (10th Cir. 2006).....	74
* <i>Viasat, Inc. v. FCC</i> , 47 F.4th 769 (D.C. Cir. 2022).....	3, 17, 36, 44, 45, 46, 48, 49, 50, 55, 57, 63, 79
Statutes	
5 U.S.C. § 706(2)(A)	31
47 U.S.C. § 303(f).....	49
47 U.S.C. § 308(a).....	5

TABLE OF AUTHORITIES (continued)

	Page(s)
47 U.S.C. § 309(a).....	6
47 U.S.C. § 312(a).....	43
47 U.S.C. § 402(b)(6).....	4
47 U.S.C. § 402(c)	4
47 U.S.C. § 405(a).....	54, 76
47 U.S.C. §§ 501-504	43
51 U.S.C. § 50901(b)(3).....	75
Regulations	
14 C.F.R. Part 400.....	75
40 C.F.R. § 1501.3(a)	11
40 C.F.R. § 1501.3(b)	12
40 C.F.R. § 1501.4(b)	3, 12, 67, 68, 74
40 C.F.R. § 1502.4(b)	79
40 C.F.R. § 1507.3(a)	13
47 C.F.R. § 0.457(d)(vii)(B).....	52
47 C.F.R. § 1.4(b)(2).....	4
47 C.F.R. § 1.17(a)(1).....	43
47 C.F.R. § 1.17(b)(1).....	43
47 C.F.R. § 1.106(f).....	54
47 C.F.R. § 1.1202(a)	35, 52

TABLE OF AUTHORITIES
(continued)

	Page(s)
47 C.F.R. § 1.1206(a)	52
47 C.F.R. § 1.1206(b)(2)	52
47 C.F.R. § 1.1306	12
47 C.F.R. § 1.1306(a)	3, 12
47 C.F.R. § 1.1307	3
* 47 C.F.R. § 1.1307(c)	3, 13, 14, 16, 25, 37, 67, 74, 78
* 47 C.F.R. § 1.1311(e)	27, 38, 75, 77
47 C.F.R. § 2.1(c)	6
47 C.F.R. § 17.4(c)	77
47 C.F.R. § 25.103	7
47 C.F.R. § 25.114	5
47 C.F.R. § 25.140(a)(3)	42
47 C.F.R. § 25.146	39
* 47 C.F.R. § 25.146(a)	10, 15, 34, 39, 40, 45
* 47 C.F.R. § 25.146(c)	10, 20, 39, 40, 45, 46, 55, 60, 64
* 47 C.F.R. § 25.289	38, 59, 60
47 C.F.R. § 1501.4(a)	11

TABLE OF AUTHORITIES (continued)

Page(s)

Administrative Materials

<i>Amend. of Parts 2 and 25 of the Commission's Rules to Permit Operation of NGSO FSS Systems Co-Frequency with GSO and Terrestrial Systems in the Ku-Band Frequency Range</i> , 16 FCC Rcd. 4096 (2000).....	8, 9
Report and Order, <i>Amend. of Env't Rules in Response to New Reguls. Issued by the Council on Env'tl. Quality</i> , 60 Rad. Reg. 2d (P & F) 13, 1986 WL 292182 (Mar. 26, 1986).....	13
<i>Space Exploration Holdings, LLC</i> , 33 FCC Rcd. 3391 (2018).....	14
<i>Space Exploration Holdings, LLC</i> , 34 FCC Rcd. 2526 (Int'l Bur. 2019).....	15
<i>Space Exploration Holdings, LLC</i> , 36 FCC Rcd. 7995 (2021) ...	14, 15, 16, 48
<i>Update to Parts 2 and 25 Concerning Non-Geostationary, Fixed-Satellite Service Systems and Related Matters</i> , 32 FCC Rcd. 7809 (2017).....	9, 39, 42, 45, 64

Other Materials

Complaint for Declaratory and Injunctive Relief, <i>Center for Biological Diversity v. FAA</i> , No. 1:23-cv-01204-CJN (D.D.C. May 1, 2023).....	76
<i>Effects of Communications Towers on Migratory Birds</i> , 77 Fed. Reg. 3935 (2012).....	77
https://www.itu.int/en/ITU-R/space/epfdData/321520025_STEAM-1_Results_Summary.pdf	16, 47
https://www.itu.int/en/ITU-R/space/Pages/epfdData.aspx	64

TABLE OF AUTHORITIES
(continued)

	Page(s)
Letter from FCC Chairwoman Jessica Rosenworcel to The Honorable Maria Cantwell (May 11, 2023).....	13
National Environmental Policy Act Implementing Regulations Revisions, 87 Fed. Reg. 23453 (Apr. 20, 2022).....	11
Update to the Regulations Implementing the Procedural Provisions of the National Environmental Policy Act, 85 Fed. Reg. 43,304 (July 16, 2020).....	11

GLOSSARY

CEQ	Council on Environmental Quality
DBS	Direct Broadcast Satellite
FAA	Federal Aviation Administration
ITU	International Telecommunication Union
NASA	National Aeronautics and Space Administration
NEPA	National Environmental Policy Act

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**BRIEF FOR THE FEDERAL COMMUNICATIONS
COMMISSION**

INTRODUCTION

Communications satellites play a critical role in delivering Internet service to remote areas, where it is difficult and expensive to build terrestrial communications networks. In the *Order* on appeal, the Federal Communications Commission (“FCC” or “Commission”) authorized Space Exploration Holdings, LLC (“SpaceX”) to deploy and

operate a constellation of 7,500 second-generation (“Gen2”) communications satellites while deferring consideration on the remainder of the nearly 30,000 Gen2 satellites SpaceX ultimately hopes to deploy. *See* Order and Authorization, *Space Exploration Holdings, LLC*, IBFS File Nos. SAT-LOA-20200526-00055 and SAT-AMD-20210818, Call Sign S3069, FCC 22-91 (rel. Dec. 1, 2022) (JA16) (“*Order*”). The Commission concluded that the authorization would serve the public interest, as required by the Communications Act, because it would help bring next-generation satellite broadband to Americans in underserved and unserved locations, and help close the digital divide. And by approving only a subset of the proposed constellation, the Commission will be able to gather real-world data about Gen2’s performance, which will inform its consideration of additional satellites that SpaceX and other providers hope to launch.

This appeal concerns two distinct challenges to that authorization. DISH Network Corporation (“DISH”), a competitor of SpaceX, challenges the FCC’s determination that SpaceX’s Gen2 service will not cause harmful interference to other satellite systems. DISH raised similar claims in *Viasat, Inc. v. FCC*, 47 F.4th 769, 776-78 (D.C. Cir.

2022), and the Court rejected them. Here, as in *Viasat*, the FCC properly adhered to its rules when it accepted SpaceX's certification of compliance with applicable power limits. And just as in *Viasat*, the Commission reasonably concluded that SpaceX's certification, combined with other conditions adopted in the *Order*, provided adequate safeguards against harmful interference.

The International Dark-Sky Association, Inc. ("the Association") asserts that the National Environmental Policy Act (NEPA) required the Commission to conduct additional environmental review of the satellites covered by the *Order*. Under the Commission's rules implementing NEPA, satellite authorizations fall into a categorical exclusion from further environmental review. 47 C.F.R. §§ 1.1306(a), 1.1307. Such review is therefore required only if the potential effects of such an authorization may be "significant." *Id.* § 1.1307(c); see 40 C.F.R. § 1501.4(b). The Commission reasonably concluded that the record did not show potentially significant effects requiring review in an environmental assessment, particularly in light of the conditions it had placed on SpaceX's operations and the commitments the company had made. The Association contends this determination was in error, but its

disagreement with the Commission's determination does not undermine the reasonableness of the *Order*.

The *Order* should be affirmed.

JURISDICTIONAL STATEMENT

This Court has jurisdiction over these consolidated appeals pursuant to 47 U.S.C. § 402(b)(6). The Commission issued the *Order* on December 1, 2022. Appellants filed timely notices of appeal within 30 days of the *Order*'s release. *See id.* § 402(c); 47 C.F.R. § 1.4(b)(2).

STATEMENT OF THE ISSUES

1. Whether the FCC properly followed its rules when it accepted SpaceX's certification that the company's proposed Gen2 service complies with applicable power limits.
2. Whether the Commission's receipt of the combined data file underlying SpaceX's certification violated DISH's due process rights or the FCC's ex parte rules.
3. Whether it was reasonable for the Commission to permit SpaceX to deploy its Gen2 service before satisfying the requirement that the company obtain a favorable interference finding from the International Telecommunications Union.

4. Whether the FCC unlawfully subdelegated its decision-making authority to the International Telecommunications Union.

5. Whether the Commission reasonably concluded that its partial authorization of SpaceX's Gen2 service did not present a potential for a significant environmental impact requiring further NEPA review.

PERTINENT STATUTES AND REGULATIONS

Pertinent statutes and regulations are set forth in the statutory and regulatory addendum bound with this brief.

STATEMENT OF THE CASE

I. STATUTORY AND REGULATORY BACKGROUND

A. Licensing Of Satellite Communication Services

The Communications Act authorizes the FCC to “grant construction permits and station licenses, or modifications or renewals thereof, only upon written application.” 47 U.S.C. § 308(a). Pursuant to this authority, the Commission reviews license applications for communications satellites (which are referred to as “space stations” under the Commission’s rules). *See Aeronautical Radio, Inc. v. FCC*, 928 F.2d 428 (D.C. Cir. 1991); 47 C.F.R. § 25.114. The Commission “shall grant” any such application if it finds that the “public interest,

convenience, and necessity would be served by the granting thereof.” 47 U.S.C. § 309(a).

In assessing whether grant of an authorization of service will serve the public interest, the Commission considers whether the proposed service will cause “harmful interference” to other communication services. *See Globalstar, Inc. v. FCC*, 564 F.3d 476, 482-83, 486-88 (D.C. Cir. 2009); *Teledesic LLC v. FCC*, 275 F.3d 75, 79-80 (D.C. Cir. 2001). FCC rules define “harmful interference” as “[i]nterference which endangers the functioning of a radionavigation service or of other safety services or seriously degrades, obstructs, or repeatedly interrupts a radiocommunication service operating in accordance with” the “Radio Regulations” of the International Telecommunications Union (“ITU”). 47 C.F.R. § 2.1(c).

The ITU, a specialized agency of the United Nations, is primarily responsible for implementing the coordination procedures adopted in the Radio Regulations for international satellite operations to guard against harmful interference. *See Spectrum Five LLC v. FCC*, 758 F.3d 254, 255-57 (D.C. Cir. 2014). This includes evaluating all satellite network filings for compliance with the Radio Regulations’ equivalent

power flux density limits.¹ Those limits were incorporated in the FCC's rules.

The technical requirements for preventing harmful interference vary based on whether the satellite communication service is provided via geostationary satellites or non-geostationary satellites.

Geostationary satellites “remain in fixed positions relative to the earth,” while non-geostationary satellites “continuously circle the earth.”

Northpoint Tech., Ltd. v. FCC, 412 F.3d 145, 155 (D.C. Cir. 2005). The FCC has categorized some non-geostationary satellite services as “fixed-satellite” services because they transmit signals to earth stations at fixed locations. Systems providing non-geostationary fixed-satellite services include “space stations in a satellite constellation,” such as those in SpaceX's system. *Amend. of Parts 2 and 25 of the*

¹ Broadly speaking, equivalent power flux density is a measure of the total power being directed by a non-geostationary satellite service toward a geostationary satellite or an earth station receiving geostationary satellite transmissions. See 47 C.F.R. § 25.103 (defining power flux density as “[t]he amount of power flow through a unit area within a unit bandwidth”); see *ibid.* (defining equivalent power flux density as “[t]he sum of the power flux densities produced at a geostationary-orbit receive earth or space station ... by all the transmit stations within a non-geostationary orbit Fixed-Satellite Service system”).

Commission's Rules to Permit Operation of NGSO FSS Systems Co-Frequency with GSO and Terrestrial Systems in the Ku-Band Frequency Range, 16 FCC Rcd. 4096, 4099 n.4 (2000) (*2000 Order*).

Non-geostationary fixed-satellite services, such as the service SpaceX proposes to offer, are allowed to “share spectrum with incumbent services without causing unacceptable interference to them.” *2000 Order*, 16 FCC Rcd. at 4099 ¶ 1. To engage in such spectrum sharing, non-geostationary fixed-satellite services must comply with the “equivalent power flux density” limits established by the ITU. *See id.* at 4100 ¶ 2. These limits were designed to prevent non-geostationary satellite services from causing harmful interference to geostationary satellite services such as direct broadcast satellite (“DBS”) services of the kind provided by DISH.

DBS “uses satellites in geostationary orbits to transmit multiple channels of video programming” over the 12.2-12.7 GHz band to “satellite dishes located at the premises of subscribers.” *DIRECTV, Inc. v. FCC*, 110 F.3d 816, 821 (D.C. Cir. 1997). Two decades ago, the FCC concluded that if non-geostationary fixed-satellite services conformed to the ITU’s equivalent power flux density limits, they could share the

12.2-12.7 GHz band with DBS services without causing harmful interference to DBS operations. *2000 Order*, 16 FCC Rcd. at 4159-72 ¶¶ 162-198.

In 2017, the Commission revised its rules governing non-geostationary fixed-satellite services. *Update to Parts 2 and 25 Concerning Non-Geostationary, Fixed-Satellite Service Systems and Related Matters*, 32 FCC Rcd. 7809 (2017) (*2017 Order*). Two of those revisions are relevant here.

First, the Commission incorporated by reference the equivalent power flux density limits set forth in Article 22 of the ITU's Radio Regulations. The Commission found it unnecessary "to restate" the ITU's power limits "in [the FCC's] rules." *2017 Order*, 32 FCC Rcd. at 7822 ¶ 42.

Second, in light of newly developed "validation software" that the ITU uses "to assess compliance with" its power limits, the Commission found that compliance review by FCC staff "would duplicate that performed by the ITU Radiocommunication Bureau" and needlessly add "a few months" to the licensing process. *2017 Order*, 32 FCC Rcd. at 7822 ¶ 41. To eliminate any such delay, the amended rules "simply

require [non-geostationary fixed-satellite service] applicants to certify that they will meet” the ITU’s equivalent power flux density limits.

Ibid.; see 47 C.F.R. § 25.146(a). The rules also require that before a licensed operator initiates non-geostationary fixed-satellite service, it “must receive a ‘favorable’ or ‘qualified favorable’ finding by the ITU Radiocommunication Bureau.” 47 C.F.R. § 25.146(c). The operator must submit the ITU’s finding to the FCC, along with the input data files used for the ITU validation software. *Id.* § 25.146(c)(1)-(2).

B. The National Environmental Policy Act (NEPA)

NEPA requires agencies to consider the environmental impact of proposed major federal actions. *DOT v. Pub. Citizen*, 541 U.S. 752, 756-57 (2004). NEPA “does not dictate particular decisional outcomes, but merely prohibits uninformed—rather than unwise—agency action.”

United Keetoowah Band of Cherokee Indians in Oklahoma v. FCC, 933 F.3d 728, 734 (D.C. Cir. 2019).

NEPA is implemented through regulations promulgated by the Council on Environmental Quality (“CEQ”).² The regulations require

² In 2020, the CEQ updated the NEPA regulations at 40 C.F.R. Parts 1500-1508. The new rules took effect September 14, 2020 and provided
(cont’d)

agencies to determine an “appropriate level of NEPA review” based on the potential significance of environmental effects. 40 C.F.R.

§ 1501.3(a). Agencies are to prepare an “environmental impact statement” for actions that are likely to have a significant effect, or an “environmental assessment” for actions that may have a significant effect. *Id.* § 1501.3(a)(2)-(3). “For efficiency,” the regulations also provide that agencies “shall identify in their agency NEPA procedures . . . categories of actions that normally do not have a significant effect on the human environment and therefore do not require preparation of an environmental assessment or environmental impact statement.” *Id.*

§ 1501.4(a). Such “[c]ategorical exclusions are not exemptions or waivers of NEPA review; they are simply one type of NEPA review.”

United Keetoowah, 933 F.3d at 735.

that agencies could opt to apply the 2020 rules “to ongoing activities and environmental documents begun *before* September 14, 2020.” Update to the Regulations Implementing the Procedural Provisions of the National Environmental Policy Act, 85 Fed. Reg. 43,304, 43372-73 (July 16, 2020). The Commission applied the 2020 rules in the *Order*. See, e.g., *Order* n.475 (JA79). In 2021, the CEQ initiated a “comprehensive review” of the 2020 rules through a two-phase rulemaking. See National Environmental Policy Act Implementing Regulations Revisions, 87 Fed. Reg. 23453, 23455-56 (Apr. 20, 2022). The first phase, which is not relevant to this appeal, took effect on May 20, 2022. *Id.* at 23453. The Phase 2 rules are still under development.

When a categorical exclusion applies, further review may still be necessary if there exist “extraordinary circumstances” in which “a normally excluded action may have a significant effect.” 40 C.F.R. § 1501.4(b). In determining whether the effects of the proposed action are “significant,” “agencies shall analyze the potentially affected environment and degree of the effects of the action.” *Id.* § 1501.3(b). Further review is not required if “there are circumstances that lessen the impacts or other conditions sufficient to avoid significant effects.” *Id.* § 1501.4(b)(1).

The Commission’s rules implementing NEPA identify specific categories of actions that require additional environmental review, none of which refer to the deployment and operation of space stations. 47 C.F.R. § 1.1306. All other Commission actions are “deemed individually and cumulatively to have no significant effect on the quality of the human environment and are categorically excluded.” 47 C.F.R. § 1.1306(a). In adopting the rules, the Commission “coordinated with [the Council on Environmental Quality] to assure compliance with [NEPA] requirements.” Report and Order, *Amend. of Env’t Rules in Response to New Reguls. Issued by the Council on Envtl. Quality*, 60

Rad. Reg. 2d (P & F) 13 ¶ 3, 1986 WL 292182 (Mar. 26, 1986); *see also* 40 C.F.R. § 1507.3(a) (“the categorical exclusions contained in agency NEPA procedures as of September 14, 2020 are consistent with” CEQ NEPA regulations).³

The Commission’s rules allow an “interested person” to submit a petition alleging that a “particular action” that otherwise falls into a categorical exclusion may have a significant environmental effect justifying further review. 47 C.F.R. § 1.1307(c). The responsible bureau shall “review the petition and consider the environmental concerns that have been raised.” *Ibid.* If the bureau “determines that the action may have a significant environmental impact, the [b]ureau

³ In response to a congressional inquiry, the FCC’s Chairwoman has explained that although the CEQ has reviewed and approved the Commission’s current categorical exclusion, she expects that future revisions to the CEQ rules “will require Federal agencies to update their NEPA implementing procedures to conform to the new CEQ regulations.” Letter from FCC Chairwoman Jessica Rosenworcel to The Honorable Maria Cantwell at 2-3 & n.4 (May 11, 2023) (<https://docs.fcc.gov/public/attachments/DOC-393533A1.pdf>). She therefore “anticipate[s] that the FCC will conduct a review of its NEPA rules following the issuance of the revised CEQ rules, including a review of whether licensing large constellations of satellites normally does not have significant effects on the human environment.” *Id.* at 3.

will require the applicant to prepare an [environmental assessment].”

Ibid.

II. FACTUAL BACKGROUND

A. Prior SpaceX Authorizations

In 2018, the Commission authorized SpaceX to deploy and operate a non-geostationary fixed-satellite service over a system comprising approximately 4,400 satellites, which the *Order* refers to as “Gen1.” *Space Exploration Holdings, LLC*, 33 FCC Rcd. 3391, 3392 ¶ 2 (2018). After reviewing the record, the Commission concluded that grant of the application would “serve the public interest, subject to [certain] requirements and conditions,” including conditions aimed at minimizing the potential for harmful interference with other operators’ transmissions. *Id.* at 3395-98 ¶¶ 7-17.

The Commission subsequently approved three applications to modify the Gen1 license. *See Order* ¶ 4 (JA19). As relevant here, the Commission in 2021 granted the third application, which sought to modify the altitude of the Gen1 satellites remaining to be launched and to make other operational changes. *See Space Exploration Holdings, LLC*, 36 FCC Rcd. 7995, 7997-98 ¶ 4 (2021) (“*Third Modification Order*”).

In the *Third Modification Order*, the Commission addressed concerns that the Gen1 satellites would cause harmful interference. FCC rules require the applicant to certify its compliance with the ITU's equivalent power flux density limits, 47 C.F.R. § 25.146(a), and the Commission was "satisfied with SpaceX's certification" of compliance. *Third Modification Order*, 36 FCC Rcd. at 8018 ¶ 39. In making this certification, SpaceX "used approved ITU software and methodologies to conduct its [compliance] analysis." *Id.* at 8017 ¶ 36.

AT&T argued that SpaceX should not be permitted "to commence operations under" its proposed third modification "until it ha[d] obtained [a] 'favorable' or 'qualified favorable' finding from the ITU." *See id.* at 8016 ¶ 35. The FCC's International Bureau, however, waived this requirement with respect to an earlier modification made by SpaceX. *See Space Exploration Holdings, LLC*, 34 FCC Rcd. 2526, 2536 ¶ 28 (Int'l Bur. 2019). The Commission saw "no reason to revoke [this] previously-granted waiver." *Third Modification Order*, 36 FCC Rcd. at 8019 ¶ 41. Nonetheless, as a condition of the FCC's authorization of the third modification, the Commission continued to require SpaceX to obtain "a favorable or 'qualified favorable' finding" from the ITU. *Id.* at

8046 ¶ 97p. Under the terms of this condition, in the event of an “unfavorable” ITU finding, “SpaceX must adjust its operation to satisfy the ITU requirements.” *Ibid.*⁴

The Commission also addressed requests by two parties to conduct an environmental assessment under NEPA before acting on SpaceX’s application. *Id.* at 8034 ¶ 74. Assuming without deciding that NEPA may apply, the Commission concluded that the issues raised in the filings did not warrant preparation of an environmental assessment because the record did not show that the alleged impacts may be significant, or because the Commission or another agency had already fully addressed potential environmental impacts. *Id.* at 8034 ¶¶ 75-77 (citing 47 C.F.R. § 1.1307(c)).

B. *Viasat, Inc. v. FCC*

Three parties challenged the *Third Modification Order* in this Court, raising issues related to the potential for harmful interference to DBS service and effects on the environment. *See Viasat, Inc. v. FCC*, 47

⁴ In October 2022, the ITU issued a favorable finding with respect to SpaceX’s third modification of its Gen1 service. *See* SpaceX October 17, 2022 Letter at 4 & n.29 (JA230); https://www.itu.int/en/ITU-R/space/epfdData/321520025_STEAM-1_Results_Summary.pdf.

F.4th 769 (D.C. Cir. 2022). The Court rejected an argument by DISH that the Commission “failed to adequately address the question of harmful interference” to its DBS service. *Id.* at 778. It also held that, notwithstanding DISH’s objections, the FCC made a “reasonable and reasonably explained” decision to waive the requirement that SpaceX obtain a favorable ITU finding before commencing service. *Id.* at 777. In addition, the Court dismissed appeals from the Commission’s determination that NEPA review was not required because, the Court held, there was “no proper party to pursue the NEPA claim” on standing and zone-of-interests grounds. *Id.* at 782. SpaceX accordingly proceeded with deployment of the remainder of its Gen1 satellites. As of June 1, 2023, SpaceX had launched 4,015 Gen1 satellites.

C. The *Order* On Review

In May 2020, SpaceX applied for a license to deploy a “second generation” (Gen2) of Starlink satellites to “complement[] and augment[]” the Gen1 system. *Order* ¶¶ 6, 8 (JA21, JA23). As amended, the application sought authority to operate 29,988 satellites at orbits between 340 km and 614 km. *Id.* ¶ 6 (JA21). Upon review of the record, the Commission approved a “partial grant,” authorizing the

deployment of 7,500 satellites at orbits of 525 km, 530 km, and 535 km, and “deferr[ed] . . . consideration of SpaceX’s proposed satellites at lower and higher altitudes, for which some parties ha[d] raised concerns that are unique to the particular orbits involved.” *Id.* ¶ 19 (JA31). The Commission explained that the partial grant would not increase “the total number of satellites SpaceX is authorized to deploy” because SpaceX now planned to provide previously authorized service on the V-band using equipment on the Gen2 satellites, rather than through “separate spacecraft.” *Ibid.*⁵ The Commission also imposed a number of conditions, including conditions related to the potential for harmful interference and potential effects on astronomy, to address concerns that had been raised in the record.

The Commission concluded that the partial grant was “in the public interest.” *Order* ¶ 19 (JA31). It would, the Commission explained, “facilitate SpaceX’s efforts to deploy satellites with next

⁵ In 2018, the Commission authorized SpaceX to deploy 7,518 satellites to support service in the V-Band of frequencies. *Order* ¶ 4 & n.17 (JA20). SpaceX has filed an application to add those V-Band operations to its authorized Gen2 satellites, which would make deployment of separate satellites unnecessary. *Id.* ¶ 2 (JA17).

generation capabilities that will help to address the pressing need for improved broadband connectivity, including in unserved and underserved areas of the United States,” as well as in “areas long thought to be impossible to serve and areas facing natural or manmade disasters.” *Id.* ¶¶ 20-21 (JA31–JA33). It would also “further the US leadership in space-based services, facilitating coverage globally and helping the efforts to close the digital divide around the world.” *Id.* ¶ 21 (JA33). In addition, limiting the number of satellites to be deployed would “permit monitoring of developments involving this large-scale deployment” to inform the Commission’s decisions as to additional satellites. *Id.* ¶ 19 (JA31).

As relevant here, the *Order* addressed comments regarding harmful interference, effects on astronomy, and NEPA.

1. Harmful Interference

SpaceX certified that “its combined [equivalent power flux density] data files” for its Gen2 Starlink system, “when analyzed with the ITU-approved validation software, comply with the applicable [power] limits.” *Order* n.151 (JA38) (citing SpaceX October 27, 2022 Letter at 2 (JA234)). The Commission concluded that this “certification

of compliance ..., along with the conditions” adopted in the *Order*, “should protect [geostationary] operations from harmful interference.” *Id.* ¶ 31 (JA38).

One condition designed to prevent harmful interference is the requirement under 47 C.F.R. § 25.146(c) that SpaceX obtain a favorable or qualified-favorable finding from the ITU. The Commission partially waived that rule to allow SpaceX to begin operations before obtaining the ITU finding, citing “the same factors” that justified a similar waiver for SpaceX’s Gen1 service. *Order* ¶ 40 (JA43).⁶ But the agency emphasized that “SpaceX must still obtain a favorable or qualified-favorable ITU finding,” and that if SpaceX chooses to deploy its Gen2 service before obtaining such a finding, it proceeds at its own risk: “Should SpaceX receive an unfavorable finding from the ITU, it must adjust its operations ... to come into compliance with all applicable [power] limits.” *Ibid.* (JA43–JA44). In addition, the Commission required that the ITU finding obtained by SpaceX must “explicitly

⁶ As a condition of this waiver, the Commission required SpaceX “to provide its input and output data files using its combined [equivalent power flux density] analysis to interested parties.” *Order* ¶ 32 (JA39). SpaceX provided its combined data files to DISH on December 30, 2022. See DISH March 6, 2023 Letter at 3 (JA250).

indicate[]” that “the ITU has considered the joint effect of SpaceX’s multiple ITU filings” in assessing the Gen2 service’s compliance with applicable power limits. *Id.* ¶ 31 (JA38).

2. Protection Of Astronomy And Science Missions

NASA, the National Science Foundation, and astronomers raised concerns that SpaceX satellites would interfere with astronomical imagery, space-based science missions, and visibility of natural phenomena in the night sky. *Order* ¶¶ 93-95 (JA62–JA64). NASA recommended steps to minimize the “impact of reflected sunlight on science missions using radio and optical electromagnetic spectrum.” *Id.* ¶ 93 (JA62). The National Science Foundation expressed concerns about the satellites’ impacts on “ground based optical, infrared and radio astronomy.” *Id.* ¶ 94 (JA63). It recommended mitigations including “reducing optical brightness to 7th magnitude or fainter via darkening, deflecting light away from the Earth, or attitude maneuvering, moving orbital elevations to ~700 km or lower, provision of orbital information for astronomers to work on scheduling observations around satellite locations, and other ideas to be developed.” *Ibid.* The National Science Foundation also noted that it

was working on a “coordination agreement” between SpaceX and radio astronomy sites to address any authorized Gen2 satellites, similar to one it had facilitated for Gen1 satellites. *Ibid.* Other astronomers expressed concerns that the “vast number of Gen2 Starlink satellites, along with their larger size, will significantly worsen the impacts on optical astronomy.” *Id.* ¶ 95 (JA63–JA64).

The Commission reviewed the “detailed information in the record regarding [SpaceX’s] mitigation efforts,” *id.* ¶ 96 (JA64), and concluded it was in the “public interest to continue to monitor SpaceX’s ongoing efforts to diminish the average brightness of its satellites to ensure that SpaceX does not unduly burden astronomy and other scientific endeavors.” *Id.* ¶ 97 (JA65). The record showed that the Gen2 satellites would incorporate three “advanced brightness mitigation techniques”—dielectric mirror film, solar array mitigation, and darkening paint—with the goal of making Gen2 “satellites invisible to the naked eye when they are on station serving users, covering the vast majority of each satellite’s lifetime.” *Id.* ¶ 96 (JA64) (citing SpaceX August 1, 2022 Letter, Attachment B) (JA1114)). In addition, “the low

altitudes of [SpaceX] satellites mean they do not reflect sunlight during the darkest parts of the night,” further minimizing effects. *Ibid.*

The record also showed that SpaceX was continuing to engage in collaborative efforts with astronomers. For example, “SpaceX makes highly accurate satellite tracking details available so astronomers can avoid its satellites.” *Ibid.* And SpaceX demonstrated a record of “regular meetings” and “good faith efforts and coordination with NASA, [the National Science Foundation], and other stakeholders in an effort to ensure a mutually beneficial sustainable space environment” and to “minimize the effects of satellites on imagery.” *Id.* ¶¶ 96-97 (JA64–JA65).

To promote continued progress, the Commission imposed a number of mitigating conditions on the SpaceX license. *Order* ¶ 98 (JA65). The Commission required SpaceX “to continue to coordinate and collaborate with NASA to promote a mutually beneficial space environment that would minimize impacts to NASA’s science missions.” *Ibid.* The Commission also directed SpaceX to coordinate with the National Science Foundation to “achieve a mutually acceptable coordination agreement to mitigate the impact of its satellites on optical

ground based astronomy.” *Ibid.* To allow the Commission to monitor progress, the Commission required SpaceX to provide an annual report “report[ing] on the progress of its communications and collaboration efforts” with NASA and addressing “whether it has reached a coordination agreement with [the National Science Foundation] addressing optical astronomy,” as well as “any steps SpaceX has taken to reduce the impact of its satellites on optical astronomy.” *Ibid.*; *see also id.* ¶¶ 135bb-135cc, 135ff-135hh (JA86–JA87).

The Commission also explained that the decision to grant the application only in part would further minimize effects on astronomy and the night sky. First, the Commission explained, the authorization of orbital altitudes up to only 580 km was consistent with the “astronomy community recommend[ation] that satellites should be operated below 600 km.” *Id.* ¶ 101 (JA66). And authorizing only 7,500 satellites out of the nearly 30,000 requested in SpaceX’s application would “reduce the severity” of the concerns raised in the record regarding deployment of the much larger constellation as the Commission “continue[s] to monitor these issues and examine the

impact of these and any future satellites we may authorize for Gen2 Starlink.” *Id.* ¶ 102 (JA67).

3. NEPA Review

The Association and others argued that the Commission should conduct an environmental assessment under NEPA because “Gen2 Starlink as proposed may, or will, have a significant impact on the human environment.” *Order* ¶ 103 (JA67). The Commission noted that the request for NEPA review raised “novel issue[s] of NEPA’s scope vis-à-vis space activities,” and that it was “not clear that all of the issues raised by the parties in the record were within the scope of NEPA.” *Id.* ¶¶ 103, 109 (JA68, JA70). But the Commission “assume[d], without deciding, that NEPA applies” and proceeded to analyze SpaceX’s application under that assumption. *Id.* ¶ 109 (JA70).

Because satellite licensing falls into a categorical exclusion, an environmental assessment of the Gen2 satellites would be required if the agency determines that the “particular action” at issue “may have a significant environmental impact.” *Order* ¶¶ 104-105 (JA68) (quoting 47 C.F.R. § 1.1307(c)). The Commission therefore considered the potential effects of the 7,500-satellite constellation, although the

Commission did “t[ake] into consideration the cumulative effect” of the previously-approved 4,408 Gen1 satellites. *Id.* ¶ 112 (JA71). The Commission declined to “speculate on how the Commission may act on the remaining proposed Gen2 Starlink satellites,” *ibid.*, which present issues “unique to the particular orbits involved.” *Id.* ¶ 19 (JA31).

Commenters argued that an environmental assessment was required as to three categories of effects: “(1) atmospheric effects from rocket launches; (2) atmospheric effects from satellites reentering the atmosphere at the end of their missions; (3) effects of reflected sunlight on the astronomy community and on the general public.” *Order* ¶ 103 (JA67).⁷ As to each category of potential effects, the Commission concluded that further environmental analysis was not required.

a. Launch Effects

Commenters argued that the Commission should assess the atmospheric effects of the rockets that transport the Gen 2 satellites to

⁷ Commenters also sought NEPA review of potential orbital debris caused by Gen2 satellites, but the Commission explained that an environmental assessment was not needed because it had “analyz[ed] these issues carefully under our extensive orbital debris mitigation analysis,” and “need not re-assess the risks of orbital debris under NEPA.” *Order* ¶¶ 124-125 (JA80). The Association does not challenge that determination.

space, which the commenters argued “emit ozone-depleting chemicals and inject particles into the stratosphere which absorb and reflect solar energy, warming the stratosphere and cooling the surface of the Earth (radiative forcing).” *Order* ¶ 113 (JA71). The Commission explained that under its rules, it “need not conduct an environmental review of the Gen2 Starlink satellite launch activity because another federal agency has reviewed the same activity under NEPA.” *Id.* ¶ 115 & n.427 (JA72) (citing 47 C.F.R. § 1.1311(e) (an environmental assessment “need not be submitted to the Commission if another agency of the Federal Government has assumed responsibility for determining whether [] the facilities in question will have a significant effect on the quality of the human environment”)).

As the Commission explained, the Federal Aviation Administration (FAA) had already “taken responsibility for environmental review” of SpaceX’s launch activities, including the “rocket launches expected to be used” to transport the satellites approved in the *Order*. *Order* ¶ 115 (JA73). Specifically, the FAA had prepared environmental assessments of the potential effects of launching those vehicles, which had resulted in a finding of no

significant impact and a mitigated finding of no significant impact. *Id.* ¶¶ 114, 115 & nn.424, 429 (JA72–JA73). Thus, “[i]n light of the FAA’s environmental review of SpaceX’s launch activities and FAA’s findings,” the Commission found it “need not require preparation of a separate [environmental assessment] addressing the atmospheric effects of rocket launches.” *Id.* ¶ 115 (JA73).

b. Atmospheric Effects From Reentering Satellites

The Commission also rejected the argument that the disposal of SpaceX satellites through burning up upon reentry at the end of their missions will cause a significant environmental effect by “introducing dangerous chemicals, including aluminum oxide (alumina) and soot, into the atmosphere.” *Order* ¶ 116 (JA74). The Commission concluded that “there would not be a significant environmental impact associated with a constellation of 7,500 Gen2 Starlink satellites demising upon reentry,” including “cumulatively with previously-approved SpaceX satellites.” *Id.* ¶ 118 (JA77).

The Commission found the “most relevant evidence in the record” to be two studies initiated by the European Space Agency that found the effects on the atmosphere from reentering satellites to be “negligible

compared to other anthropogenic activities” such as the aviation and road transportation sectors. *Order* ¶ 116 (JA75). The Commission relied on this assessment to conclude there would not be a significant environmental impact associated with the approved satellites demising upon reentry, including “cumulatively with previously-approved SpaceX satellites.” *Ibid.*

However, the Commission also recognized that additional observational data “could help the scientific community better quantify emissions and develop more accurate atmospheric modeling studies,” *Order* ¶ 117 (JA76), as well as “assist the Commission in potential future determinations regarding larger deployments.” *Id.* ¶ 118 (JA77). The Commission accordingly conditioned the partial grant on “SpaceX’s commitment to work with the scientific community on this issue to explore methods to collect observational data on formation of alumina from satellite reentry, to implement reasonable methods that are discovered to the extent practicable, and to report findings from these measurements to the Commission annually.” *Ibid.*

c. Astronomy And The Night Sky

The Association and others urged the Commission to require an environmental assessment to address the effects of “sunlight reflecting off the satellites” on astronomy, the general public, and the natural world. *Order* ¶¶ 120, 123 (JA77, JA79). The Commission explained that it had assessed the impacts on astronomy and science under its obligation, under the Communications Act, “to ensure grant of this application is in the public interest,” and that it “need not conduct additional review under NEPA where [it had] thoroughly examined the issues and imposed appropriate conditions on SpaceX to ensure that there will not be a significant impact.” *Id.* ¶¶ 120, 122 (JA77, JA79). For the same reason, it concluded there would not be significant effects on the general public. *Id.* ¶ 123 (JA79–JA80). The Commission also reiterated that it was “monitoring this issue to ensure that our licensing action serves the public interest, and . . . to ensure SpaceX’s authorized operations do not unduly burden astronomy and other research endeavors.” *Id.* ¶ 122 (JA79).

d. Programmatic Environmental Impact Statement

The Commission also declined the Association's request to address the "potential environmental impacts arising from the Commission's entire satellite licensing regime" in a "programmatic Environmental Impact Statement (EIS) that would address the potential consequences of the proposed operations of all commercial satellite operators before authorizing further satellite deployment." *Order* ¶ 108 (JA69). The Commission explained that this request was a challenge to the "overall regulatory framework" and not appropriately addressed in an individualized licensing decision. *Ibid.*

STANDARD OF REVIEW

Under the Administrative Procedure Act, the Court must uphold an agency's decision unless it is "arbitrary, capricious, an abuse of discretion, or otherwise not in accordance with law." 5 U.S.C. § 706(2)(A). Under this "deferential" standard, "[a] court simply ensures that the agency has acted within a zone of reasonableness and, in particular, has reasonably considered the relevant issues and reasonably explained the decision." *FCC v. Prometheus Radio Project*, 141 S. Ct. 1150, 1158 (2021). The Court "is not to ask whether [the

challenged] regulatory decision is the best one possible or even whether it is better than the alternatives.” *FERC v. Elec. Power Supply Ass’n*, 577 U.S. 260, 292 (2016). “The Commission need only articulate a ‘rational connection between the facts found and the choice made.’” *Rural Cellular Ass’n v. FCC*, 588 F.3d 1095, 1105 (D.C. Cir. 2009) (quoting *Motor Vehicle Mfrs. Ass’n v. State Farm Mut. Ins. Co.*, 463 U.S. 29, 43 (1983)).

This Court reviews an agency’s compliance with NEPA under the Administrative Procedure Act’s “deferential standard of review.” *Mayo v. Reynolds*, 875 F.3d 11, 19 (D.C. Cir. 2017). When reviewing an agency’s compliance with NEPA, this Court “consistently decline[s] to flyspeck an agency’s environmental analysis.” *Ctr. for Biological Diversity v. FERC*, 67 F.4th 1176, 1182 (D.C. Cir. 2023) (cleaned up). The review recognizes that “inherent in NEPA and its implementing regulations is a rule of reason,” which requires the Court to take into account “the usefulness of any new potential information to the decisionmaking process.” *Mayo*, 875 F.3d at 20.

SUMMARY OF THE ARGUMENT

The FCC reasonably determined that SpaceX's deployment and operation of up to 7,500 Gen2 Starlink low-earth-orbit communication satellites—in accordance with specified conditions—would be in the public interest because, among other things, it would help bring next generation satellite broadband service to underserved and hard-to-reach areas of the United States. Appellants' interference-related and environmental challenges are unpersuasive.

I. The FCC reasonably concluded that “SpaceX's certification of compliance with” the ITU's equivalent power flux density limits, “along with the conditions” adopted in the *Order*, will “protect [geostationary satellite] operations from harmful interference” by “ensur[ing] that SpaceX's Gen2 Starlink system will comply with” the ITU's power limits. *Order* ¶ 31 (JA38).

DISH challenges several aspects of the FCC's treatment of the interference issue in this proceeding. None of DISH's claims has merit.

A. The FCC properly adhered to its rules when it accepted SpaceX's certification of compliance with applicable power limits, subject to later verification by the ITU. DISH maintains that the

Commission erred by failing to consider a DISH-commissioned study purporting to show that SpaceX does not comply with the ITU's power limits. But FCC rules require only that SpaceX certify its compliance before obtaining authorization. *See* 47 C.F.R. § 25.146(a). SpaceX satisfied that requirement here. And “nothing in [the FCC's] rules requires other parties' independent confirmation of SpaceX's [interference] analysis using the ITU software.” *Order* ¶ 34 (JA40).

B. There is no basis for DISH's contention (Br. 31-34) that the FCC violated due process by failing to make SpaceX's combined data file available to DISH before the *Order* was issued. That claim rests on the erroneous premise that the FCC relied on the substance of the combined data file as a basis for approving SpaceX's service. To the contrary, the Commission expressly stated that it did “*not* consider the substance of the combined data file in reaching [its] decision.” *Order* ¶ 34 (JA40) (emphasis added).

DISH also asserts (Br. 40-44) that the Commission violated its ex parte rules by failing to require disclosure of the combined data file before the *Order*'s release. Those rules, however, did not require disclosure of the combined file because that document was not “directed

to the merits or outcome of a proceeding.” *See* 47 C.F.R. § 1.1202(a).

The combined file was submitted by SpaceX at the International Bureau’s request solely “to facilitate ITU coordination” by providing a “complete record” before the ITU, not to address the merits or outcome of the proceeding before the FCC. *Order* ¶ 34 (JA40–JA41). In any event, even assuming that an ex parte violation occurred, any such violation was harmless. DISH was aware of the data file at the time the *Order* was released, and SpaceX provided the combined file to DISH on December 30, 2022 (within the 30-day period for seeking FCC reconsideration of the *Order*). Thus, DISH had an opportunity to call to the Commission’s attention any asserted deficiencies in the combined file “[a]t the reconsideration stage” of this proceeding. *See Blanca Tel. Co. v. FCC*, 743 F.3d 860, 867 (D.C. Cir. 2014).

C. It was reasonable for the FCC to require SpaceX to obtain a favorable finding from the ITU without requiring that the finding be obtained before SpaceX deployed its new service. DISH argues (Br. 45-47) that the FCC acted arbitrarily by waiving the requirement that Space X obtain a favorable ITU finding before commencing service. DISH made—and this Court rejected—essentially the same argument

in *Viasat*, 47 F.4th at 777-78. The Commission adequately justified its waiver in this proceeding, citing the same factors that led the Court to uphold a similar waiver in *Viasat*. And here, as in *Viasat*, it was not arbitrary for the FCC to require SpaceX to obtain an ITU finding after deploying the new service because “future ITU review ... still serves a purpose: If the ITU should make an unfavorable finding, SpaceX will have to eliminate interference going forward.” *Id.* at 777-78. “In the meantime, other licensees may report any present interference” to the FCC “through established regulatory channels,” *id.* at 778, and the Commission “will take appropriate action” to eliminate any “harmful interference.” *Order* ¶ 34 (JA41).

D. Contrary to DISH’s assertion (Br. 48-57), the FCC did not unlawfully subdelegate its decision-making authority to the ITU. The favorable ITU finding that the Commission required SpaceX to obtain is a “legitimate outside party input into [the FCC’s] decision-making processes” for two reasons: (1) the ITU finding is “a reasonable condition for granting federal approval” of SpaceX’s Gen2 service; and (2) the ITU finding merely provides the Commission with “factual

information.” *United States Telecom Ass’n v. FCC*, 359 F.3d 554, 566-67 (D.C. Cir. 2004) (“*USTA*”).

II. The Commission also reasonably concluded that authorization of the Gen2 satellites in the *Order* would cause no significant environmental impacts that required further review under NEPA. Satellites are subject to a categorical exclusion from such review unless the Commission determines that the “particular action” before it “may have a significant environmental impact.” 47 C.F.R. § 1.1307(c). Based on the record before it, the Commission reasonably concluded that this standard was not met as to the three categories of potential effects the Association has raised in this appeal.

First, the Commission concluded that significant effects on astronomy and the night sky would be avoided because of SpaceX’s planned mitigation techniques and the license conditions the Commission imposed. Second, the Commission reasonably concluded that the most persuasive studies in the record predicted that the potential effects on the atmosphere of satellites burning up on reentry would be minor. Third, the Commission reasonably concluded that it need not review the potential effects of emissions generated by the

launch vehicles that transport Gen2 satellites to space because the FAA had already prepared environmental assessments covering those emissions, on which the Commission may permissibly rely. 47 C.F.R. § 1.1311(e). The Commission also reasonably declined to prepare a programmatic environmental impact statement, because this abstract challenge to the Commission's regulatory framework for evaluating the environmental effects of satellite deployments, which would require speculation on future satellite licensing applications, was not appropriately addressed in an individual licensing proceeding.

ARGUMENT

I. THE COMMISSION PROPERLY APPLIED ITS RULES IN FINDING THAT SPACEX COULD PROVIDE ITS GEN2 SERVICE WITHOUT CAUSING HARMFUL INTERFERENCE TO DISH'S DBS SERVICE

The operator of a non-geostationary satellite system “must not cause unacceptable interference to” geostationary satellite services such as DBS. 47 C.F.R. § 25.289. Under FCC rules, a non-geostationary satellite system operator “will be considered as having fulfilled [its] obligation” not to cause harmful interference to DBS services if it “operat[es] in compliance with the applicable equivalent power flux density limits in Article 22, Section II of the ITU Radio Regulations.” *Ibid.* To demonstrate compliance with these limits, the operator must

follow the two-step procedure prescribed by Section 25.146 of the FCC's rules, 47 C.F.R. § 25.146. First, when applying to the FCC for a license, the operator must certify that it will comply with the ITU's power limits. *Id.* § 25.146(a)(2). Second, after obtaining a license, the operator “must receive a ‘favorable’ or ‘qualified favorable’ finding by the ITU Radiocommunication Bureau” confirming the operator's compliance. *Id.* § 25.146(c).

When it adopted this regulatory framework in 2017, the Commission made clear that the ITU—not the FCC or its staff—would make findings regarding an operator's compliance with the ITU's power limits. The Commission explained that since it was “adopting the [equivalent power flux density] limits contained in Article 22 of the ITU Radio Regulations, and applicants must use the ITU-approved validation software to assess compliance with these limits,” any review by the Commission's staff “would duplicate that performed by the ITU Radiocommunication Bureau,” needlessly adding time to the review process. *2017 Order*, 32 FCC Rcd. at 7822 ¶ 41. “Given the newly available ITU validation software and the separate analysis conducted by the ITU” as part of its international coordination process, the

Commission reasonably concluded that additional review by its own staff was unnecessary. *Ibid.* Once an operator obtains a “favorable” or “qualified favorable” finding from the ITU, it need only notify the FCC of the ITU’s finding and provide the Commission with the input data files used for the ITU validation software. 47 C.F.R. § 25.146(c)(1)-(2).

In this proceeding, pursuant to 47 C.F.R. § 25.146(a), SpaceX certified that “its combined [equivalent power flux density] data files” for its Gen2 Starlink system, “when analyzed with the ITU-approved validation software, comply with the applicable [power] limits.” *Order* n.151 (JA38) (citing SpaceX October 27, 2022 Letter at 2 (JA234)). Under 47 C.F.R. § 25.146(c), SpaceX must verify its compliance by obtaining a “favorable” or “qualified favorable” finding from the ITU Radiocommunication Bureau.

The Commission granted a partial waiver of this rule to allow SpaceX to “commence operations ... prior to receiving [the] ITU finding.” *Order* ¶ 40 (JA43). But, the Commission emphasized, “SpaceX must still obtain a favorable or qualified-favorable ITU finding and communicate that finding to” the Commission. *Ibid.* In addition, as a condition of its authorization of the Gen2 system, the FCC required

SpaceX “to obtain a finding from the ITU that expressly indicates the ITU has considered the joint effect of SpaceX’s multiple ITU filings” concerning the system. *Id.* ¶ 32 (JA39). If SpaceX decides to deploy its Gen2 service before the ITU completes its review, “SpaceX proceeds at its own risk and must adjust its operations” if it receives an unfavorable finding from the ITU. *Id.* ¶ 34 (JA40); *see also id.* ¶ 40 (JA43–JA44).

The Commission concluded that “SpaceX’s certification of compliance,” combined with the requirement that SpaceX “obtain a [favorable or qualified favorable] finding from the ITU” based on “the joint effect of SpaceX’s multiple ITU filings,” will “ensure that SpaceX’s Gen2 Starlink system will comply with the [ITU’s power] limits” and thereby “protect [geostationary] operations from harmful interference.” *Order* ¶ 31 (JA38). That finding was reasonable and lawful. DISH’s claims to the contrary lack merit.

A. The Commission Reasonably Relied On SpaceX’s Certification That Its Gen2 Service Complies With The ITU’s Power Limits.

It is common—and entirely permissible—for the Commission to rely on certifications by applicants for FCC licenses. “Certification is the mechanism the FCC employs for a broad range of its ... functions.”

Global Crossing Telecomms., Inc. v. FCC, 259 F.3d 740, 745 (D.C. Cir. 2001).⁸ Indeed, “the Commission has adopted certification requirements for other satellite power limits, even in the absence of any technical review.” *2017 Order*, 32 FCC Rcd. at 7822 n.92; *see* 47 C.F.R. § 25.140(a)(3) (applicants for geostationary space station licenses (like those DISH operates) must certify that they comply with specified power limits).

This Court has held that the Commission may reasonably rely on a party’s certification where (as here) “certification is merely the initial step” in the regulatory process. *Global Crossing*, 259 F.3d at 745. Although SpaceX has certified that it complies with the ITU’s power limits, it is still required to obtain a “favorable” or “qualified favorable” finding from the ITU. *Order* ¶ 40 (JA43). “Should SpaceX receive an

⁸ *See, e.g., Cellular Phone Taskforce v. FCC*, 205 F.3d 82, 92-93 (2d Cir. 2000) (the Commission permissibly relied on applicants’ “undocumented self-certification of compliance” with the FCC’s limits on radiofrequency emissions); *CHM Broad. Ltd. P’ship v. FCC*, 24 F.3d 1453, 1455-56 (D.C. Cir. 1994) (applicants for radio station licenses demonstrate their financial qualifications via self-certification). *See generally Schoenbohm v. FCC*, 204 F.3d 243, 247 (D.C. Cir. 2000) (quoting *Leflore Broad. Co. v. FCC*, 636 F.2d 454, 461 (D.C. Cir. 1980)) (“effective regulation is premised upon the agency’s ability to depend upon the representations made to it by its licensees.”).

unfavorable finding from the ITU, it must adjust its operations ... to come into compliance with” the ITU’s power limits. *Ibid.* (JA43–JA44).

Furthermore, the Communications Act and “the Commission’s rules impose an enforceable duty of truthfulness on licensees.” *Order* n.161 (JA40) (citing 47 U.S.C. § 312(a) and 47 C.F.R. § 1.17(a)(1), (b)(1)). If SpaceX “is found to have certified falsely,” it could face “penalties, including fines and forfeitures, in an enforcement action brought by the Commission.” *See Global Crossing*, 259 F.3d at 745 (citing 47 U.S.C. §§ 501-504). Intentional misrepresentations to the Commission can result in license revocation. *See Contemporary Media, Inc. v. FCC*, 214 F.3d 187, 196 (D.C. Cir. 2000).

Given the potentially serious consequences that could flow from a false or incorrect certification—including the prospect of having to reconfigure its operations to achieve compliance with applicable power limits—SpaceX had a strong incentive to ensure that its certification of compliance was accurate. Therefore, it was entirely reasonable for the FCC to accept SpaceX’s certification, since that certification was subject to subsequent verification by the ITU.

Given the FCC's reasonable reliance on SpaceX's certification, the Commission's finding that the Gen2 system would not cause harmful interference was not "unsupported," as DISH claims (Br. 34). To the contrary, this Court previously held that SpaceX's "certified compliance with ITU power limits" was sufficient to support the FCC's finding that a proposed modification to SpaceX's Gen1 service would "not increase interference to [geostationary] satellite systems." *Viasat*, 47 F.4th at 777 (cleaned up).

Before the Commission, DISH submitted a study purporting to show that "when running the SpaceX input files through the ITU validation software, combining SpaceX's 18 separate filings into one input datafile but making no modifications to SpaceX's input parameters or the parameters of the software," SpaceX's Gen2 Starlink service "will violate" the ITU's power limits. *Order* ¶ 30 (JA37). DISH contends that the FCC unlawfully disregarded this "evidence." DISH Br. 26-30. Under the FCC's rules, however, DISH's study was irrelevant to the agency's licensing decision.

"[N]othing in [the Commission's] rules requires other parties' independent confirmation of SpaceX's [equivalent power flux density]

analysis using the ITU software to protect them from harmful interference.” *Order* ¶ 34 (JA40). To the contrary, FCC rules required only that SpaceX (1) certify its compliance with the applicable ITU limits and (2) subsequently obtain a finding from the ITU that verifies its compliance. 47 C.F.R. § 25.146(a), (c). In adopting those rules, the Commission made clear that it would not independently evaluate an applicant’s certification of compliance, but would instead rely on the ITU’s review process to verify the applicant’s conformity with the ITU’s interference rules. *2017 Order*, 32 FCC Rcd. at 7822 ¶ 41. Thus, when the agency accepted SpaceX’s certification of compliance (subject to confirmation by the ITU), the FCC properly “adhere[d] to its own rules and regulations.” *See Viasat*, 47 F.4th at 776 (quoting *AT&T Corp. v. FCC*, 448 F.3d 426, 434 (D.C. Cir. 2006)).

DISH asserts that the Commission cannot reasonably rely on SpaceX’s certification because “unrebutted record evidence showed” that the Gen2 system “would violate the [applicable] power limits ... using the ITU’s software.” DISH Br. 29. But this showing was not undisputed. Contrary to DISH’s study, SpaceX certified that it “analyzed” the combined data files “for its entire Gen2 system” using

“the ITU-approved validation software,” and it found that the system “compl[ies] with the applicable [power] limits.” SpaceX October 27, 2022 Letter at 2 (JA234). Under 47 C.F.R. § 25.146(c), any dispute concerning the accuracy of SpaceX’s certification is resolved by the ITU, which (in the FCC’s view) “is in the best position to review compliance with applicable [power] limits.” *Order* ¶ 27 (JA36).

DISH claims that its interference study was “the only credible evidence” in the record. Br. 34. But DISH does not explain why the Commission should have regarded DISH’s study as more “credible” than SpaceX’s certification. As we have explained, *see* pp. 42-43 above, SpaceX had a powerful incentive to ensure that its certification was accurate because an incorrect certification could result in a significant disruption of SpaceX’s operations and substantial fines. By contrast, there was some reason to doubt the findings of the study performed by DISH’s expert. In an earlier proceeding, the same expert—using what he claimed was “a better method for calculating interference” than the ITU’s software—predicted in March 2020 that SpaceX’s Gen1 system “would interfere” with DISH’s DBS service. *See Viasat*, 47 F.4th at 776. To date, however, the FCC has received no reports of actual harmful

interference caused by SpaceX's Gen1 system. And in October 2022, the ITU gave the modified Gen1 system a favorable finding, confirming that system's compliance with applicable power limits. See SpaceX October 17, 2022 Letter at 4 & n.29 (JA230); https://www.itu.int/en/ITU-R/space/epfdData/321520025_STEAM-1_Results_Summary.pdf.⁹

In any event, because the FCC's acceptance of SpaceX's certification is conditioned on subsequent confirmation of compliance by the ITU, the Commission and its staff had no reason to take DISH's interference study into account. It is the ITU's compliance finding that will control. If Space X obtains a favorable or qualified favorable finding from the ITU, DISH's study is beside the point; conversely, if the ITU determines that the Gen2 system is out of compliance, SpaceX must modify its operations to address the issues identified by the ITU, again without regard to DISH's analysis. As a result, the Commission did not independently review SpaceX's compliance with the ITU's power

⁹ This case is distinguishable from those cited by DISH (Br. 29) in which an agency relied on representations "that [it knew were] false at the time it relie[d] on them." See *Animal Legal Def. Fund v. Perdue*, 872 F.3d 602, 619 (D.C. Cir. 2017); *Missouri Pub. Serv. Comm'n v. FERC*, 337 F.3d 1066, 1075 (D.C. Cir. 2003). At most, the FCC was presented with unresolved conflicting evidence relating to the potential interference posed by the Gen2 Starlink system.

limits or any studies purporting to show that the Gen2 system exceeded those limits. Rather, in accordance with its rules, the FCC accepted SpaceX's certification, subject to confirmation by the ITU.¹⁰

If DISH is dissatisfied with the regulatory framework created by the FCC's rules, it can petition the agency for a rulemaking to revise those rules. But the Commission rightly refused to deviate from its rules in this licensing proceeding. It is a "hornbook" tenet of administrative law that an agency should not "entertain a challenge to a regulation, adopted pursuant to notice and comment, in an adjudication or licensing proceeding." *Viasat*, 47 F.4th at 776 (quoting *Tribune Co. v. FCC*, 133 F.3d 61, 68 (D.C. Cir. 1998)). The Commission properly adhered to that principle here. *See Order* ¶ 29 & n.140 (JA37) (the FCC "decline[d] to deviate from [its] rule of relying on ITU review

¹⁰ There is no merit to DISH's assertion (Br. 31) that "consistency" with past practice "requires" that the FCC consider "DISH's evidence." DISH bases this claim on the fact that the FCC conditioned approval of SpaceX's Gen1 system "on SpaceX's commitment to a single satellite per frequency per area." *Ibid.* But that condition, which "reflect[ed] the way [SpaceX] operates its [Gen1] system," was "proposed by DISH" and "agreed to" by SpaceX. *Third Modification Order*, 36 FCC Rcd. at 8018 ¶ 39. In adopting that condition, the Commission did not analyze SpaceX's compliance under "the ITU method" (Br. 31) that DISH insists the agency was required to undertake here.

of compliance” because that issue was “outside the scope of this licensing proceeding”).

DISH argues that by relying on SpaceX’s certification, the FCC violated its statutory mandate “to prevent interference with existing services” because the agency authorized the launch of a new service “that has *never* been found by *any* decisionmaker to be free from harmful interference to other users of the spectrum.” Br. 33 (citing 47 U.S.C. § 303(f)). But the FCC followed—and this Court upheld—the same approach in authorizing the third modification of SpaceX’s Gen1 Starlink service. Relying solely on SpaceX’s certification that the modified Gen1 service complied with applicable power limits, the Commission partially waived its rules to allow SpaceX to deploy the service before the ITU confirmed SpaceX’s compliance. The Court affirmed the Commission’s determination that this waiver served the public interest. *See Viasat*, 47 F.4th at 776-78. Although DISH claimed that authorization of the modified Gen1 service before the completion of ITU review violated the FCC’s statutory mandate to prevent harmful interference, this Court rejected “the premise that the FCC failed to adequately address the question of harmful interference” in approving

the modified Gen1 service. *Id.* at 778. The Court should reach the same conclusion regarding FCC approval of the Gen2 service.

B. The Commission’s Handling Of SpaceX’s Combined Data File Did Not Violate Due Process Or The FCC’s Ex Parte Rules.

Initially, after consulting with ITU staff, SpaceX divided the data for its Gen2 system “into 18 separate ... datafiles for purposes of [interference] analysis.” *Order* ¶ 31 (JA38). Later, at the International Bureau’s request, SpaceX “submitted a single combined filing” to the Bureau, “including an input datafile and output file for all of its proposed Gen2 Starlink satellites.” *Ibid.* The Bureau requested this combined filing in order “to facilitate preparation for ITU coordination activities,” *ibid.*—that is, to enable the Commission to “discharge” its “obligation as the relevant administration” in the ITU review process by ensuring that the ITU has “a complete record” for evaluating SpaceX’s Gen2 service, *id.* ¶ 34 (JA41).

The Commission also required SpaceX to make its combined data file “available to any requesting party.” *Order* ¶ 33 (JA40). But the agency declined requests by DISH and others to “require SpaceX to provide its combined data file on the record.” *Id.* ¶ 34 (JA40). It also

“reject[ed] parties’ requests for access to those data, and for time to evaluate them, prior to [its] issuance” of the *Order*. *Ibid.* (JA40–JA41).

The Commission explained that those requests were “based on the mistaken premise that [it] would be considering the substance of the combined data file—rather than focusing on SpaceX’s certification—in reaching [its] decision in this licensing proceeding.” *Ibid.* (JA40).

DISH’s “due process” argument rests on the same flawed premise. *See* Br. 32 (asserting that a “due process issue” was “created by the Commission’s apparent reliance on secret data that no other party had a timely chance to review or rebut”). DISH argues that if the FCC “did rely on” the combined data file “to support its decision,” due process “requires” a remand to afford DISH “the opportunity to review and comment on the evidence” on which “the Commission relied.” Br. 34. But the Commission expressly stated that it did “*not* consider the substance of the combined data file in reaching [its] decision.” *Order* ¶ 34 (JA40) (emphasis added). Consequently, DISH has no basis for raising a due process claim.¹¹

¹¹ In any event, DISH cannot assert a due process claim because it “has no constitutionally protected property right to use its satellites to
(cont’d)

Likewise, there is no merit to DISH's contention (Br. 40-44) that the FCC violated its ex parte rules by failing to require disclosure of SpaceX's combined data file before the *Order* was issued. Those rules require public disclosure of the contents of any "written ex parte presentation" to the FCC or its staff in proceedings (like this one) where the Commission permits such presentations. 47 C.F.R. § 1.1206(a), (b)(2). This requirement, however, applies only to presentations "directed to the merits or outcome of a proceeding." *Id.* § 1.1202(a). SpaceX's combined data file was no such presentation.

As the Commission explained, the sole purpose of the International Bureau's request for SpaceX's combined data file was "to facilitate preparation for ITU coordination activities," *Order* ¶ 31 (JA38). Under the FCC's rules, documents prepared in connection with ITU coordination are not routinely available for public inspection. *See* 47 C.F.R. § 0.457(d)(vii)(B).

provide FCC-licensed service." *Order* ¶ 28 (JA37). *See FCC v. Sanders Bros. Radio Station*, 309 U.S. 470, 475 (1940) (an FCC licensee does not obtain "a property right as a result of the granting of a license"); *Mobile Relay Assocs. v. FCC*, 457 F.3d 1, 12 (D.C. Cir. 2006) (the right to use spectrum under an FCC license "does not constitute a property interest protected by the Fifth Amendment").

The disclosure requirement for ex parte presentations did not apply to the combined file because that document was submitted to facilitate ITU coordination, not to address the merits or outcome of SpaceX's application for FCC authorization of the Gen2 service. Indeed, the Commission made clear that it did "not consider the substance of the combined data file in reaching [its] decision" to authorize the service. *Order* ¶ 34 (JA40). Absent any indication that the combined file "may have influenced the agency's ultimate decision," there is no reason to believe that SpaceX's submission of this document "irrevocably tainted" the agency's decision-making process. *See Prof. Air Traffic Controllers Org. v. FLRA*, 685 F.2d 547, 564-65 (D.C. Cir. 1982).

In any event, even if one were to assume an ex parte violation, any such violation was "harmless" because DISH had an opportunity to "contest" any "arguments that were advanced" in SpaceX's combined file "[a]t the reconsideration stage" of this proceeding. *See Blanca*, 743 F.3d at 867. The contents of SpaceX's combined file are no longer "secret." Br. 32. DISH acknowledges that it "received" the combined file on December 30, 2022. Br. 34; DISH March 6, 2023 Letter at 3

(JA250). Because DISH obtained the combined file within thirty days of the *Order*'s release, and was aware of the existence of such a file at the time of release, it could have challenged the substance of the document by petitioning for reconsideration. *See* 47 U.S.C. § 405(a); 47 C.F.R. § 1.106(f).¹² Although DISH elected not to seek FCC reconsideration, the fact remains that any ex parte violation that may have occurred here “did not prejudice” DISH because it had an opportunity to “contest” the substance of SpaceX’s combined file “[a]t the reconsideration stage” of this proceeding. *Blanca*, 743 F.3d at 867. Thus, DISH cannot plausibly claim that it had no “chance to review or rebut” the combined file (Br. 32).

C. It Was Reasonable For The Commission To Require SpaceX To Obtain A Favorable Finding From The ITU Without Requiring That The Finding Be Obtained Before SpaceX Deployed Its Gen2 Service.

Section 25.146(c) of the FCC’s rules provides that “[p]rior to the initiation of service,” a licensed non-geostationary satellite system

¹² Even if DISH was unable to complete its analysis of the combined file before the deadline for seeking reconsideration, it could have filed a timely reconsideration petition and then sought leave to file a later supplement setting forth its analysis of the combined file. *See* 47 C.F.R. § 1.106(f).

operator “must receive a ‘favorable’ or ‘qualified favorable’ finding by the ITU ... regarding its compliance with applicable ITU [power] limits.” 47 C.F.R. § 25.146(c). The FCC granted SpaceX’s request for a partial waiver of this rule to allow SpaceX to “commence operations ... prior to receiving that ITU finding.” *Order* ¶ 40 (JA43). The Commission found that “the same factors” that supported “a partial waiver” of the rule “for Gen1 Starlink” justified a similar waiver for the Gen2 service. *Ibid.* The FCC determined that such a waiver would benefit the public by “allowing SpaceX to begin deployment” of its Gen2 service “as soon as possible to bring next-generation service to unserved and underserved areas” both nationally “and globally.” *Ibid.* Citing the same concern about expediting deployment of service to unserved and underserved areas, the Court held in *Viasat*, 47 F.4th at 777, that the FCC adequately justified its partial waiver of Section 25.146(c) for the Gen1 service.

The Commission emphasized that this “partial waiver” did not relieve SpaceX of its obligation under Section 25.146(c) to “obtain a favorable or qualified-favorable ITU finding” for its Gen2 service. *Order* ¶ 40 (JA43). In addition, the Commission required that “the finding

from the ITU explicitly indicate the ITU has considered the joint effect of SpaceX's multiple ITU filings" for the Gen2 service. *Id.* ¶ 34 (JA40). The Commission specified that if SpaceX decides "to commence operations" before obtaining an ITU finding, the company "proceeds at its own risk and must adjust its operations if it does not receive a favorable finding from the ITU." *Ibid.*

The Commission reasonably concluded that these conditions, combined with SpaceX's certification of compliance with the ITU's power limits, "should protect [geostationary satellite] operations from harmful interference." *Order* ¶ 31 (JA38). The Commission also said that it would "take appropriate action" in the event "any [geostationary satellite] operators" reported "actual harmful interference from SpaceX." *Id.* ¶ 34 (JA41).

DISH argues (Br. 45) that the FCC "arbitrarily contradicted itself by waiving" Section 25.146(c), the rule on which it relied to prevent harmful interference. DISH acknowledges, however, that the FCC did *not* waive the rule's requirement that SpaceX obtain an ITU finding confirming its compliance with applicable power limits. Nonetheless, DISH complains that the *Order* "waived the crucial portion" of the rule:

“the requirement that SpaceX obtain ITU approval before initiating service.” DISH Br. 46.

DISH made essentially the same argument in *Viasat*, and the Court rejected it. In that case, DISH argued that the partial waiver of Section 25.146(c) was “illogical” because “requiring SpaceX to receive a favorable ITU finding in the future” would not foreclose “the possibility of harmful interference in the present.” *Viasat*, 47 F.4th at 777. The Court was unpersuaded. It concluded that although “future ITU review will neither prevent nor undo any current interference, it still serves a purpose: If the ITU should make an unfavorable finding, SpaceX will have to eliminate interference going forward.” *Id.* at 777-78. “In the meantime,” the Court said, “other licensees may report any present interference” to the FCC “through established regulatory channels.” *Id.* at 778. For the same reasons that the Court declined to find the waiver in *Viasat* “illogical,” *id.* at 777, it should reject DISH’s claim that the waiver in this case was “arbitrary” (Br. 47).

D. The Commission Did Not Improperly Subdelegate Its Decision-Making Authority To The ITU.

DISH maintains that the Commission in this proceeding unlawfully subdelegated its decision-making authority to the ITU. DISH Br. 48-57. That claim is baseless.

As DISH acknowledges (Br. 50), this Court has recognized that federal agencies may permissibly rely on certain “types of legitimate outside party input into agency decision-making processes.” *USTA*, 359 F.3d at 566. In such cases, “no subdelegation of decision-making authority [has] actually taken place.” *Id.* at 567. For example, an agency’s consideration of outside party input does not amount to unlawful subdelegation if the input (1) is “a reasonable condition for granting federal approval” or (2) involves “fact gathering.” *See id.* at 566-68. The required ITU finding in this case qualifies as “legitimate outside party input” on both counts. *Order* ¶ 28 (JA36).

First, the ITU finding is a reasonable condition on FCC approval of SpaceX’s Gen2 service. The Commission “may condition its grant of permission on the decision of another entity ... so long as there is a reasonable connection between the outside entity’s decision and the [FCC’s] determination.” *USTA*, 359 F.3d at 567. Such a connection

exists here. A “favorable” or “qualified-favorable” finding by the ITU provides confirmation that the operator of a non-geostationary satellite system complies with the ITU’s equivalent power flux density limits. If the operator complies with those limits, it satisfies its “obligation” under the FCC’s rules not to “cause unacceptable interference to” geostationary satellite networks. *See* 47 C.F.R. § 25.289. A “favorable” or “qualified-favorable” finding by the ITU regarding the potential for harmful interference thus has a direct connection to the FCC’s decision to authorize SpaceX’s Gen2 service.

DISH is simply wrong when it asserts that “ITU approval” is “a floor, not a ceiling, on the Commission’s independent obligation to prevent interference.” DISH Br. 52. The Commission satisfied its duty to prevent harmful interference by adopting a rule that incorporates by reference the power limits found in the ITU Radio Regulations and requires non-geostationary satellite system operators to comply with those limits. Under that rule, any operator that complies with the ITU’s power limits “will be considered as having fulfilled” its

“obligation” not to “cause unacceptable interference to” geostationary satellite systems. 47 C.F.R. § 25.289.¹³

DISH contends that the Court must find an unlawful delegation here because the FCC does not plan to conduct “an independent review” of the ITU’s finding. Br. 52. It notes that “where courts have approved a delegation, the agency remains as a backstop.” *Ibid.* But an ITU finding of compliance—the reasonable condition imposed by 47 C.F.R. § 25.146(c)—obviates the need for further interference analysis by the FCC. Furthermore, “reasonable conditions” are “*not* subdelegations of authority.” *Rettig*, 987 F.3d at 532 (emphasis added). Where (as here) a federal agency reasonably conditions a grant of permission on a decision by an outside entity, the agency is not required to—and typically does not—reconsider the outside entity’s decision. For example, when the federal administrator of the Fire Island National Seashore conditioned the grant of a vehicular use permit on the grant of

¹³ It is “a common and accepted practice” for federal agencies to incorporate standards developed by outside entities into federal regulations. *Texas v. Rettig*, 987 F.3d 518, 532 (5th Cir. 2021); *see Am. Soc’y for Testing & Materials v. Public.Resource.Org, Inc.*, 896 F.3d 437, 442 (D.C. Cir. 2018); *Amerada Hess Pipeline Corp. v. FERC*, 117 F.3d 596, 601 (D.C. Cir. 1997).

similar permits by local municipalities, there was no federal review of local officials' decisions to grant such permits. *See United States v. Matherson*, 367 F. Supp. 779, 782 (E.D.N.Y. 1973). And when the Secretary of the Interior conditioned right-of-way permits across tribal lands on the tribal government's approval, the Secretary did not independently review the tribe's decision to approve or disapprove. *See S. Pacific Transp. Co. v. Watt*, 700 F.2d 550, 556 (9th Cir. 1983).

In any event, DISH's claim that the FCC "abdicated" its authority to the ITU (Br. 53) lacks merit. The Commission properly exercised its decision-making authority "when it initially reviewed and accepted the ... incorporati[on]" of the ITU's power limits into its own rules. *See Rettig*, 987 F.3d at 532 (quoting *La. Pub. Serv. Comm'n v. FERC*, 761 F.3d 540, 552 (5th Cir. 2014)). By adopting the ITU's power limits as its own, the FCC made a considered and independent judgment that a satellite system operator's compliance with those limits will prevent harmful interference. Therefore, the FCC did not subdelegate its decision-making authority to the ITU when it conditioned its approval of SpaceX's service on an ITU finding that the service complies with ITU power limits.

In addition, the ITU finding required by the FCC does not constitute an improper subdelegation because the ITU is simply “provid[ing] the [Commission] with factual information.” *USTA*, 359 F.3d at 567. The ITU’s finding addresses a key factual question: Does a proposed satellite service comply with the ITU’s equivalent power flux density limits? To answer this question, the ITU applies its validation software to the data it receives regarding the operational parameters of the proposed service. Contrary to DISH’s assertion (Br. 53-54), this sort of “fact gathering” is a “legitimate outside party input,” not an unlawful subdelegation. *USTA*, 359 F.3d at 566.

DISH argues that without FCC oversight, the Commission’s reliance on the ITU’s finding is improper. DISH observes that in *USTA*, the Court found that the FCC could not rely on state commissions’ findings because “FCC oversight” of the states was “neither timely nor assured.” Br. 54 (quoting *USTA*, 359 F.3d at 567). In that case, however, “the state commissions’ role” went beyond “fact finding” and “nondiscretionary information gathering”; states were required to “make crucial decisions” on matters involving subjective judgments, including “market definition and application of” a general FCC

standard “to the specific circumstances of [particular] markets.” *USTA*, 359 F.3d at 567. By contrast, the ITU finding that the FCC required here involves nothing more than the determination of a specific fact—*i.e.*, whether SpaceX’s proposed Gen2 service complies with applicable power limits that are precisely defined by ITU Radio Regulations and incorporated into FCC rules.

The Commission reasonably concluded that “the ITU is in the best position to review compliance with applicable [equivalent power flux density] limits.” *Order* ¶ 27 (JA36). Through its detailed coordination and recording procedures for space systems and earth stations, the ITU plays a vital role in the global management of the radiofrequency spectrum and satellite orbits. The primary objective of the ITU’s coordination process is to ensure interference-free operations of radiocommunication systems. The ITU achieves this objective through implementation of the Radio Regulations, including the equivalent power flux density limits. Compliance with the limits is assessed by using ITU-approved validation software. *See Viasat*, 47 F.4th at 776. And in its role as coordinator of international satellite system

operations, the ITU regularly uses its validation software to perform compliance review for satellite systems around the globe.¹⁴

Given the ITU's extensive experience in evaluating satellite systems' compliance with equivalent power flux density limits, the FCC reasonably decided to condition its approval of non-geostationary satellite services on an ITU finding of compliance. *See* 47 C.F.R. § 25.146(c). The Commission saw no reason for its staff to conduct a separate compliance review that would simply “duplicate” the analysis “performed by the ITU.” *2017 Order*, 32 FCC Rcd. at 7822 ¶ 41.

The factual information provided by the ITU's compliance findings is a “legitimate outside party input into [the FCC's] decision-making” process. *USTA*, 359 F.3d at 566. Accordingly, the FCC did not unlawfully subdelegate its decision-making authority to the ITU when it decided to rely on the ITU's factual findings concerning compliance.

II. THE COMMISSION REASONABLY FOUND THAT THE RECORD DID NOT SHOW THE NEED FOR AN ENVIRONMENTAL ASSESSMENT

The Commission reasonably determined that the record did not show that the partial grant of SpaceX's application to deploy and

¹⁴ In 2022 alone, the ITU conducted dozens of such compliance inquiries. *See* <https://www.itu.int/en/ITU-R/space/Pages/epfdData.aspx>.

operate its Gen2 Starlink system, on specified conditions, may have a significant environmental impact requiring an environmental assessment. In challenging that determination, the Association focuses on three potential effects of the Gen2 deployment: (1) the effects of satellites on astronomy and the night sky; (2) the deposit of alumina and other chemicals and particles in the atmosphere during satellite reentry; and (3) emissions resulting from satellite launches. The Commission reasonably determined that the record failed to show that any of these effects would be significant or required further review.

A. The Commission Reasonably Concluded That There Would Be No Significant Effects On Astronomy And The Night Sky

The Commission reasonably concluded that it need not require an environmental assessment of the potential effects of deployment and operation of Gen2 satellites on astronomy and the night sky. As the Commission found, SpaceX's mitigation plans, in combination with the other conditions the Commission imposed, would be "sufficient to avoid significant environmental effects." *Order* ¶ 122 (JA79).

In reaching that conclusion, the Commission reviewed "detailed information" about SpaceX's "advanced brightness mitigation

techniques” and other “efforts to reduce the brightness of sunlight reflections from its satellites.” *Id.* ¶ 96 (JA64). Those efforts include “geometry changes,” “material specifications,” “maneuvering operations to reduce satellite brightness and aim reflected sunlight away from the Earth,” and “a satellite coating to mitigate diffuse reflectance.” *Ibid.* SpaceX engineers had also developed tools “to better predict brightness for new satellite designs,” which would allow SpaceX to “incorporate brightness mitigations into the initial design of its satellites.” *Ibid.* Overall, the Commission observed, SpaceX expected to make Gen2 satellites “invisible to the naked eye” throughout the “vast majority of each satellite’s lifetime.” *Ibid.*

The Commission also noted that SpaceX already “makes highly accurate satellite tracking details available so astronomers can avoid its satellites,” *Order* ¶ 96 (JA65), and imposed additional conditions on SpaceX to further mitigate the potential for significant effects on astronomy and science missions. Those conditions require SpaceX to

- “continue to coordinate and collaborate with NASA” to “minimize impacts to NASA’s science missions,”

- “reach a coordination agreement with [the National Science Foundation] to protect optical ground-based astronomy,”
- “coordinate with [the National Science Foundation] as well as with specific observatories for operations in specific frequency bands to protect radioastronomy operations,” and
- “submit regular reports to the Commission regarding progress in its efforts to protect optical astronomy.” *Id.* ¶ 122 (JA79).

The Commission properly applied its rules in concluding that SpaceX’s planned mitigation efforts, combined with these conditions, were “sufficient to avoid significant environmental effects.” *Order* ¶ 122 (JA79). Where an activity falls within a categorical exclusion, the threshold question for determining whether to perform an environmental assessment is whether the action may have a “significant” environmental effect. 47 C.F.R. § 1.1307(c); *see* 40 C.F.R. § 1501.4(b). The mere “presence of some negative effects does not necessarily rise to the level of demonstrating a significant effect on the environment.” *Am. Wild Horse Campaign v. Bernhardt*, 963 F.3d 1001, 1009 (9th Cir. 2020); *New York v. Nuclear Regul. Comm’n*, 681 F.3d 471, 482 (D.C. Cir. 2012) (effects that are “nonzero” may “still be

insignificant”). Thus, evidence that satellites may have some effect on the night sky would not require an environmental assessment unless the effects may be “significant,” which the Commission reasonably found not to be the case here.

The Commission also reasonably relied on SpaceX’s extensive mitigation plans to conclude that an environmental assessment of potential effects on astronomy was not required. Under the CEQ regulations, further review of a categorically excluded action is not required where, as here, the “agency determines that there are circumstances that lessen the impacts or other conditions sufficient to avoid significant effects.” 40 C.F.R. § 1501.4(b)(1); *see also Sierra Club v. Van Antwerp*, 661 F.3d 1147, 1154, 1156 (D.C. Cir. 2011) (NEPA reflects the “general principle of taking mitigation into account”); *City of New York v. ICC*, 4 F.3d 181, 186 (2d Cir. 1993) (in declining to require an environmental assessment for bus operating licenses that otherwise would be covered by a categorical exclusion, agency reasonably relied on potential for mitigation).

The Association is mistaken (Br. 36) that reliance on SpaceX’s mitigation efforts means the Commission “implicitly recognized there

existed effects” requiring an environmental assessment. As the Ninth Circuit explained in rejecting an argument that mitigating measures “trigger the need to prepare” an environmental assessment, such a rule would “create an incentive for agencies to leave out important conditions on permits for fear that the presence of the conditions would preclude the availability of the categorical exclusion.” *Alaska Ctr. For Env’t v. U.S. Forest Serv.*, 189 F.3d 851, 859-60 (9th Cir. 1999).

The Association asserts that the record demonstrated that potential effects may be significant. Br. 32, 39-40. But in support it cites to generalized “studies [that] show the negative impacts that [l]ight pollution” coming from many sources other than satellites “can have on human health,” or that address much larger numbers of satellites than those the Commission has permitted SpaceX to deploy. See Br. 34 (citing United Nations Office for Outer Space Affairs, et al., *Dark and Quiet Skies for Science and Society: Report and Recommendations* (2020) (“*Dark & Quiet Skies*”) (addressing potential effects of multiple sources of artificial light at night); see *Dark & Quiet Skies* at 28 (JA353) (discussing potential effects of 78,000 satellites). These studies, which examine wholly different circumstances from

those presented by this case, do not undermine the Commission's conclusion that effects on astronomy and the night sky will not be significant from a much smaller number of satellites employing "advanced brightness mitigation techniques," *Order* ¶ 96 (JA64), and that are subject to conditions of the sort recommended in the studies themselves. *See, e.g., Dark & Quiet Skies* at 144 (JA469) (recommending orbital altitudes below 600km); *Order* ¶¶ 101, 122 (JA66, JA79) (in line with astronomy community recommendations, license conditions "restrict[] SpaceX's operations to below 580 km").

The Association further argues that the Commission could not rely on SpaceX's "goal[s]" and "expectation[s]" regarding its new mitigation techniques. Br. 8, 27-28, 36. But given that NEPA review *precedes* a proposed action, there is nothing arbitrary about the Commission relying on yet-to-be-implemented mitigation. *See, e.g., Am. Bird Conservancy v. FCC*, 516 F.3d 1027, 1033 (D.C. Cir. 2008) (NEPA analysis takes place "before the action is taken").

The Commission also adequately responded to comments arguing that the general public, flora, and fauna would be affected by "solar reflectivity and sky glow" (the latter term referring to diffuse

background light). *See* Br. 26, 36. The Commission explained that “the record d[id] not show” that such effects would be significant because of SpaceX’s “brightness mitigation efforts” that aim to make “satellites invisible to the naked eye when they are on station serving users, covering the vast majority of each satellite’s lifetime,” and because of the conditions it imposed to address effects on astronomy. *Order* ¶ 123 (JA79–JA80). As to sky glow, the Commission cited record evidence that the “effect of satellites on the overall brightness of the sky . . . is expected to be minimal even as the number of satellites grows significantly.” *Id.* n.471 (JA79). Under these circumstances, the Commission reasonably concluded that the asserted effects of reflected light from Gen2 deployment and operations on the “general public,” as well as “plants, and animals,” *id.* ¶ 123 (JA79–JA80), did not merit an environmental assessment.

B. The Commission Reasonably Concluded That Reentry Emissions Would Not Have A Significant Environmental Impact

The Commission also reasonably concluded that the record did not show a potentially significant effect from Gen2 Starlink satellites reentering Earth’s atmosphere. *See* Br. 28-31. The Commission

acknowledged comments arguing that satellite reentry may create particles and chemicals such as alumina, and that there were competing estimates of the amount of alumina that reentering satellites may release, as well as how that amount compared to other sources of metals in the atmosphere, such as those contributed by meteoroids and the space shuttle program. *Order* ¶ 116 (JA74). But it found the “most relevant evidence in the record” to be two studies initiated by the European Space Agency that “focus[] specifically on atmospheric effects of reentering spacecrafts.” *Id.* ¶ 118 (JA76). Those studies concluded that the effect of reentering satellites would be “negligible”—“290,000 times less than the annual impact of the aviation sector and 650,000 times less than the annual impact of the road transportation sector.” *Id.* ¶¶ 116-117 (JA75–JA76). The Commission reasonably concluded that these studies were “sufficiently persuasive . . . to conclude that there would not be a significant environmental impact” from reentering Gen2 satellites “cumulatively with previously-approved SpaceX satellites.” *Id.* ¶ 118 (JA77). The Commission therefore did not rely on a lack of certainty regarding potential reentry effects, as the Association asserts (Br. 41).

The Commission's conclusion is not undermined, as the Association contends (Br. 30), by evidence that "scientific understanding of emissions from large constellations of satellites in the upper atmosphere is nascent," and involves "assumptions and models" that "observational . . . data" could help evaluate. *Order* ¶ 118 (JA76). When "the most relevant evidence" in the record, *ibid.*, suggests a negligible effect despite some unknowns, it was reasonable for the Commission to "use[] the existing evidence to assess the level of uncertainty and ma[ke] reasonable predictions on the basis of prior data to conclude that there would be no significant environmental impact." *Am. Wild Horse Campaign*, 963 F.3d at 1008-09. The Commission's approach is all the more reasonable given that the agency conditioned its partial grant on SpaceX's "commitment" to "explore methods to collect observational data on formation of alumina from satellite reentry, to implement reasonable methods that are discovered to the extent practicable, and to report findings from these measurements to the Commission annually." *Order* ¶ 118 (JA77).

Contrary to the Association's suggestion (Br. 28, 19 n.7), it was also reasonable for the Commission to consider only the potential effects

of the partial grant it adopted in the *Order*, rather than the potential effects of all the satellites for which SpaceX sought—but was not granted—approval. *Order* ¶ 112 (JA71). Section 1.1307(c) of the Commission’s rules requires the agency to assess only whether the “particular action” under consideration may have a significant effect. 47 C.F.R. § 1.1307(c); *see also* 40 C.F.R. § 1501.4(b) (“[i]f an agency determines that a categorical exclusion . . . covers a proposed action, the agency shall evaluate *the action*” for potential significant effects (emphasis added)). The Commission therefore reasonably declined to “speculate on how the Commission may act on the remaining proposed Gen2 Starlink satellites and other potential applications that may be filed in the future for additional satellites.” *Order* ¶ 112 (JA71); *see Ctr. for Biological Diversity v. Salazar*, 706 F.3d 1085, 1096-97 (9th Cir. 2013) (in determining whether categorical exclusion applies, agency required to consider only the “proposed action”); *Utah Env’t Congress v. Bosworth*, 443 F.3d 732, 741 (10th Cir. 2006) (similar); *City of New York*, 4 F.3d at 185 (similar).¹⁵

¹⁵ The Commission did, however, take into account the previously authorized 4,408 Gen1 Starlink satellites, in addition to the 7,500

(cont’d)

C. The Commission Reasonably Concluded That It Was Not Required To Duplicate The FAA's Review Of Launch Emissions

Contrary to the Association's contention (Br. 41-44), the Commission was not required to analyze launch emissions because the FAA had already prepared environmental assessments of "the rocket launches expected to be used to transport the Gen2 Starlink satellites." *Order* ¶ 115 (JA73). Under the Commission's rules, an environmental assessment need not be submitted to the Commission if another federal agency "has assumed responsibility for determining whether . . . the facilities in question will have a significant effect on the quality of the human environment." 47 C.F.R. § 1.1311(e).

That is the case here. As the Commission recognized, *Order* n.431 (JA73), the FAA is the agency authorized to license and regulate commercial launch and reentry activities.¹⁶ And the FAA has led a

satellites authorized under the *Order*. *Order* ¶ 112 (JA71). It also stated that if it "consider[s] approving additional satellites in th[e] system," it would "consider the additional proposed Starlink satellites on a cumulative basis with those approved." *Id.* ¶ 117 (JA76).

¹⁶ The Secretary of Transportation has the authority to license commercial space launches. *See* 51 U.S.C. § 50901(b)(3). That authority has been delegated to the FAA by regulation. *See* 14 C.F.R. Part 400.

sustained and extensive analysis of the potential environmental impacts from operation of SpaceX's launch vehicles. *See Order* ¶ 115 & nn.428-429 (JA72–JA73) (citing, *inter alia*, Final Environmental Assessment and Finding of No Significant Impact for SpaceX Falcon Launches at Kennedy Space Center and Cape Canaveral Air Force Station (July 2020) (JA787); Final Programmatic Environmental Assessment for the SpaceX Starship/Superheavy Launch Vehicle at the SpaceX Boca Chica Launch Site in Cameron County, Texas (June 2022) (JA920)).¹⁷

The Association asserts (Br. 44) that the Commission “erroneously applied” Section 1.1311(e) because there was no “explicit assumption” of responsibility by the FAA to engage in its environmental analysis. Br. 42. At the outset, this argument “has been forfeited” because it “was never raised with the Commission.” *Nat’l Lifeline Ass’n v. FCC*, 983 F.3d 498, 509 (D.C. Cir. 2020) (citing 47 U.S.C. § 405(a)). In any event,

¹⁷ After the *Order* was released, a group of environmental organizations filed a district court challenge to the June 2022 mitigated finding of no significant impacts from launch activities at the Boca Chica launch site. *See Complaint for Declaratory and Injunctive Relief, Center for Biological Diversity v. FAA*, No. 1:23-cv-01204-CJN (D.D.C. May 1, 2023).

the Association's contention is without merit. Nothing in Section 1.1311(e) requires that the Commission enter a "written agreement" (Br. 42) with the FAA or participate in the preparation of an environmental assessment as a cooperating agency. Instead, the rule applies, by its terms, whenever another federal agency "has assumed responsibility" for environmental review of the action in question. 47 C.F.R. § 1.1311(e).

Nor is such a requirement found in the Commission order concerning the effect of communications towers on migratory birds that the Association cites (Br. 43). *See Effects of Communications Towers on Migratory Birds*, 77 Fed. Reg. 3935 ¶ 57 (2012). That order adopted an environmental notification rule that is specific to antenna structure registrations, 47 C.F.R. § 17.4(c), and simply explains that the Commission "cannot assume" that another agency will take the lead. *See* 77 Fed. Reg. at 3935 ¶ 57. But here, the FAA has *already* prepared environmental assessments of SpaceX's launch activities, and therefore clearly has "assumed responsibility" for doing so within the meaning of the rule. 47 C.F.R. § 1.1311(e).

The Association contends that the FAA did not “adequately or sufficiently demonstrate that the FAA addressed all of the specific concerns raised by the Appellant and others.” Br. 44. But it does not identify any environmental concern relating to SpaceX launches that the FAA failed to address or offer any reason that the Commission acted unreasonably in concluding that the FAA had addressed “all reasonably foreseeable activities and effects.” *Order* ¶ 114 (JA72).¹⁸

D. The Commission Reasonably Declined To Prepare A Programmatic Environmental Impact Statement

Lastly, the Commission did not “err[]” (Br. 31) by rejecting the Association’s request for the agency to prepare a programmatic environmental impact statement “analyzing the potential consequences of the proposed operations of all commercial satellite operators before authorizing satellite deployment.” NRDC/IDA Comments at 12 (JA300). Under CEQ rules, agencies “may” prepare programmatic environmental impact statements “for programmatic Federal actions,

¹⁸ It is of no importance that Section 1.1311(e) applies to “submissions by an applicant,” as the Association notes (Br. 42). If the agency were to conclude that the action may have a significant environmental impact, it will “require the applicant to prepare an [environmental assessment].” 47 C.F.R. § 1.1307(c).

such as the adoption of new agency programs.” 40 C.F.R. § 1502.4(b).

“The decision whether to prepare a programmatic EIS is committed to the agency’s discretion.” *Nevada v. Dep’t of Energy*, 457 F.3d 78, 92 (D.C. Cir. 2006).

The Commission reasonably concluded that the request for a programmatic environmental impact statement fell “outside the scope” of the licensing proceeding before it, which involved SpaceX’s application for Commission approval to deploy the company’s Gen2 Starlink satellites. *Order* ¶ 108 (JA69). By contrast, the agency explained, the Association’s request for a programmatic environmental impact statement implicates the Commission’s “overall regulatory framework.” *Ibid.* As this Court made clear in reviewing a challenge to the Commission’s approval of SpaceX’s Gen1 satellite deployment, “an agency need not—indeed should not—entertain a challenge to a regulation, adopted pursuant to notice and comment, in an adjudication or licensing proceeding.” *Viasat*, 47 F.4th at 776; *see also supra* at 48.

Moreover, the Commission has refused to “speculate” on how the agency “may act on the remaining proposed Gen2 Starlink satellites and other potential applications that may be filed in the future for

additional satellites.” *Order* ¶ 112 (JA71). Future applications for further satellite deployment by SpaceX or other satellite providers may—or may not—be approved. There is therefore a “practical” impediment to conducting a programmatic environmental impact statement, since it is “impossible to predict” the consequences of aggregated approvals, because there is currently no “overall plan” for such approvals. *Kleppe v. Sierra Club*, 427 U.S. 390, 401-402 (1976).

In sum, the Commission reasonably concluded that none of the potential impacts of the Commission’s partial approval of SpaceX’s Gen2 application may be significant, requiring additional review in an environmental assessment or programmatic environmental impact statement.

CONCLUSION

The *Order* should be affirmed.

Dated: August 16, 2023

Respectfully submitted,

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I, Rachel Proctor May, hereby certify that on August 16, 2023, I filed the foregoing FINAL Brief for the Federal Communications Commission with the Clerk of the Court for the United States Court of Appeals for the District of Columbia Circuit using the electronic CM/ECF system. Participants in the case who are registered CM/ECF users will be served by the CM/ECF system.

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STATUTORY ADDENDUM

Contents

47 U.S.C. § 307.....	Add. 1
47 U.S.C. § 308.....	Add. 1
47 U.S.C. § 309.....	Add. 2
47 U.S.C. § 312.....	Add. 2
47 U.S.C. § 405.....	Add. 3
47 U.S.C. § 503.....	Add. 5
40 C.F.R. § 1501.3.....	Add. 6
40 C.F.R. § 1501.4.....	Add. 7
40 C.F.R. § 1502.4.....	Add. 7
40 C.F.R. § 1507.3.....	Add. 8
47 C.F.R. § 0.457.....	Add. 9
47 C.F.R. § 1.3.....	Add. 10
47 C.F.R. § 1.17.....	Add. 10
47 C.F.R. § 1.106.....	Add. 11
47 C.F.R. § 1.1202.....	Add. 11
47 C.F.R. § 1.1206.....	Add. 12
47 C.F.R. § 1.1306.....	Add. 16
47 C.F.R. § 1.1307.....	Add. 17
47 C.F.R. § 1.1311.....	Add. 19
47 C.F.R. § 2.1.....	Add. 19
47 C.F.R. § 25.103.....	Add. 19
47 C.F.R. § 25.146.....	Add. 20
47 C.F.R. § 25.289.....	Add. 21

47 U.S.C. § 307
§ 307. Licenses

(a) Grant

The Commission, if public convenience, interest, or necessity will be served thereby, subject to the limitations of this chapter, shall grant to any applicant therefor a station license provided for by this chapter.

47 U.S.C. § 308
§ 308. Requirements for license

(a) Writing; exceptions

The Commission may grant construction permits and station licenses, or modifications or renewals thereof, only upon written application therefor received by it: *Provided*, That (1) in cases of emergency found by the Commission involving danger to life or property or due to damage to equipment, or (2) during a national emergency proclaimed by the President or declared by the Congress and during the continuance of any war in which the United States is engaged and when such action is necessary for the national defense or security or otherwise in furtherance of the war effort, or (3) in cases of emergency where the Commission finds, in the nonbroadcast services, that it would not be feasible to secure renewal applications from existing licensees or otherwise to follow normal licensing procedure, the Commission may grant construction permits and station licenses, or modifications or renewals thereof, during the emergency so found by the Commission or during the continuance of any such national emergency or war, in such manner and upon such terms and conditions as the Commission shall by regulation prescribe, and without the filing of a formal application, but no authorization so granted shall continue in effect beyond the period of the emergency or war requiring it: *Provided further*, That the Commission may issue by cable, telegraph, or radio a permit for the operation of a station on a vessel of the United States at sea, effective in

lieu of a license until said vessel shall return to a port of the continental United States.

47 U.S.C. § 309

§ 309. Application for license

(a) Considerations in granting application

Subject to the provisions of this section, the Commission shall determine, in the case of each application filed with it to which section 308 of this title applies, whether the public interest, convenience, and necessity will be served by the granting of such application, and, if the Commission, upon examination of such application and upon consideration of such other matters as the Commission may officially notice, shall find that public interest, convenience, and necessity would be served by the granting thereof, it shall grant such application.

47 U.S.C. § 312

§ 312. Administrative sanctions

(a) Revocation of station license or construction permit

The Commission may revoke any station license or construction permit-

-

- (1) for false statements knowingly made either in the application or in any statement of fact which may be required pursuant to section 308 of this title;
- (2) because of conditions coming to the attention of the Commission which would warrant it in refusing to grant a license or permit on an original application;
- (3) for willful or repeated failure to operate substantially as set forth in the license;

(4) for willful or repeated violation of, or willful or repeated failure to observe any provision of this chapter or any rule or regulation of the Commission authorized by this chapter or by a treaty ratified by the United States;

(5) for violation of or failure to observe any final cease and desist order issued by the Commission under this section;

(6) for violation of section 1304, 1343, or 1464 of Title 18; or

(7) for willful or repeated failure to allow reasonable access to or to permit purchase of reasonable amounts of time for the use of a broadcasting station, other than a non-commercial educational broadcast station, by a legally qualified candidate for Federal elective office on behalf of his candidacy.

47 U.S.C. § 405

§ 405. Petition for reconsideration; procedure; disposition; time of filing; additional evidence; time for disposition of petition for reconsideration of order concluding hearing or investigation; appeal of order

(a) After an order, decision, report, or action has been made or taken in any proceeding by the Commission, or by any designated authority within the Commission pursuant to a delegation under section 155(c)(1) of this title, any party thereto, or any other person aggrieved or whose interests are adversely affected thereby, may petition for reconsideration only to the authority making or taking the order, decision, report, or action; and it shall be lawful for such authority, whether it be the Commission or other authority designated under section 155(c)(1) of this title, in its discretion, to grant such a reconsideration if sufficient reason therefor be made to appear. A petition for reconsideration must be filed within thirty days from the date upon which public notice is given of the order, decision, report, or action complained of. No such application shall excuse any person from complying with or obeying any order, decision, report, or action of the

Commission, or operate in any manner to stay or postpone the enforcement thereof, without the special order of the Commission. The filing of a petition for reconsideration shall not be a condition precedent to judicial review of any such order, decision, report, or action, except where the party seeking such review (1) was not a party to the proceedings resulting in such order, decision, report, or action, or (2) relies on questions of fact or law upon which the Commission, or designated authority within the Commission, has been afforded no opportunity to pass. The Commission, or designated authority within the Commission, shall enter an order, with a concise statement of the reasons therefor, denying a petition for reconsideration or granting such petition, in whole or in part, and ordering such further proceedings as may be appropriate: *Provided*, That in any case where such petition relates to an instrument of authorization granted without a hearing, the Commission, or designated authority within the Commission, shall take such action within ninety days of the filing of such petition. Reconsiderations shall be governed by such general rules as the Commission may establish, except that no evidence other than newly discovered evidence, evidence which has become available only since the original taking of evidence, or evidence which the Commission or designated authority within the Commission believes should have been taken in the original proceeding shall be taken on any reconsideration. The time within which a petition for review must be filed in a proceeding to which section 402(a) of this title applies, or within which an appeal must be taken under section 402(b) of this title in any case, shall be computed from the date upon which the Commission gives public notice of the order, decision, report, or action complained of.

47 U.S.C. § 503
§ 503. Forfeitures

* * *

(b) Activities constituting violations authorizing imposition of forfeiture penalty; amount of penalty; procedures applicable; persons subject to penalty; liability exemption period

(1) Any person who is determined by the Commission, in accordance with paragraph (3) or (4) of this subsection, to have--

(A) willfully or repeatedly failed to comply substantially with the terms and conditions of any license, permit, certificate, or other instrument or authorization issued by the Commission;

(B) willfully or repeatedly failed to comply with any of the provisions of this chapter or of any rule, regulation, or order issued by the Commission under this chapter or under any treaty, convention, or other agreement to which the United States is a party and which is binding upon the United States;

(C) violated any provision of section 317(c) or 509(a) of this title; or

(D) violated any provision of section 1304, 1343, 1464, or 2252 of Title 18;

shall be liable to the United States for a forfeiture penalty. A forfeiture penalty under this subsection shall be in addition to any other penalty provided for by this chapter; except that this subsection shall not apply to any conduct which is subject to forfeiture under subchapter II of this chapter, part II or III of subchapter III of this chapter, or section 507 of this title.

40 C.F.R. § 1501.3

§ 1501.3 Determine the appropriate level of NEPA review.

(a) In assessing the appropriate level of NEPA review, Federal agencies should determine whether the proposed action:

- (1) Normally does not have significant effects and is categorically excluded (§ 1501.4);
- (2) Is not likely to have significant effects or the significance of the effects is unknown and is therefore appropriate for an environmental assessment (§ 1501.5); or
- (3) Is likely to have significant effects and is therefore appropriate for an environmental impact statement (part 1502 of this chapter).

(b) In considering whether the effects of the proposed action are significant, agencies shall analyze the potentially affected environment and degree of the effects of the action. Agencies should consider connected actions consistent with § 1501.9(e)(1).

(1) In considering the potentially affected environment, agencies should consider, as appropriate to the specific action, the affected area (national, regional, or local) and its resources, such as listed species and designated critical habitat under the Endangered Species Act. Significance varies with the setting of the proposed action. For instance, in the case of a site-specific action, significance would usually depend only upon the effects in the local area.

(2) In considering the degree of the effects, agencies should consider the following, as appropriate to the specific action:

- (i) Both short- and long-term effects.
- (ii) Both beneficial and adverse effects.
- (iii) Effects on public health and safety.
- (iv) Effects that would violate Federal, State, Tribal, or local law protecting the environment.

40 C.F.R. § 1501.4

§ 1501.4 Categorical exclusions.

(a) For efficiency, agencies shall identify in their agency NEPA procedures (§ 1507.3(e)(2)(ii) of this chapter) categories of actions that normally do not have a significant effect on the human environment, and therefore do not require preparation of an environmental assessment or environmental impact statement.

(b) If an agency determines that a categorical exclusion identified in its agency NEPA procedures covers a proposed action, the agency shall evaluate the action for extraordinary circumstances in which a normally excluded action may have a significant effect.

(1) If an extraordinary circumstance is present, the agency nevertheless may categorically exclude the proposed action if the agency determines that there are circumstances that lessen the impacts or other conditions sufficient to avoid significant effects.

(2) If the agency cannot categorically exclude the proposed action, the agency shall prepare an environmental assessment or environmental impact statement, as appropriate.

40 C.F.R. § 1502.4

§ 1502.4 Major Federal actions requiring the preparation of environmental impact statements.

* * *

(b) Environmental impact statements may be prepared for programmatic Federal actions, such as the adoption of new agency programs. When agencies prepare such statements, they should be relevant to the program decision and timed to coincide with meaningful points in agency planning and decision making.

(1) When preparing statements on programmatic actions (including proposals by more than one agency), agencies may find it useful to evaluate the proposal(s) in one of the following ways:

(i) Geographically, including actions occurring in the same general location, such as body of water, region, or metropolitan area.

(ii) Generically, including actions that have relevant similarities, such as common timing, impacts, alternatives, methods of implementation, media, or subject matter.

(iii) By stage of technological development including Federal or federally assisted research, development or demonstration programs for new technologies that, if applied, could significantly affect the quality of the human environment. Statements on such programs should be available before the program has reached a stage of investment or commitment to implementation likely to determine subsequent development or restrict later alternatives.

(2) Agencies shall as appropriate employ scoping (§ 1501.9 of this chapter), tiering (§ 1501.11 of this chapter), and other methods listed in §§ 1500.4 and 1500.5 of this chapter to relate programmatic and narrow actions and to avoid duplication and delay. Agencies may tier their environmental analyses to defer detailed analysis of environmental impacts of specific program elements until such program elements are ripe for final agency action.

40 C.F.R. § 1507.3

§ 1507.3 Agency NEPA procedures.

(a) The Council has determined that the categorical exclusions contained in agency NEPA procedures as of September 14, 2020, are consistent with this subchapter.

47 C.F.R. § 0.457

§ 0.457 Records not routinely available for public inspection.

* * *

(d) Trade secrets and commercial or financial information obtained from any person and privileged or confidential—categories of materials not routinely available for public inspection, 5 U.S.C. 552(b)(4) and 18 U.S.C. 1905.

(1) The materials listed in this paragraph have been accepted, or are being accepted, by the Commission on a confidential basis pursuant to 5 U.S.C. 552(b)(4). To the extent indicated in each case, the materials are not routinely available for public inspection. If the protection afforded is sufficient, it is unnecessary for persons submitting such materials to submit therewith a request for non-disclosure pursuant to § 0.459. A persuasive showing as to the reasons for inspection will be required in requests submitted under § 0.461 for inspection of such materials.

* * *

(vii) The following records, relating to coordination of satellite systems pursuant to procedures codified in the International Telecommunication Union (ITU) Radio Regulations:

* * *

(B) Documents prepared in connection with coordination, notification, and recording of frequency assignments and Plan modifications, including but not limited to minutes of meetings, supporting exhibits, supporting correspondence, and documents and correspondence prepared in connection with operator-to-operator arrangements.

47 C.F.R. § 1.3

§ 1.3 Suspension, amendment, or waiver of rules.

The provisions of this chapter may be suspended, revoked, amended, or waived for good cause shown, in whole or in part, at any time by the Commission, subject to the provisions of the Administrative Procedure Act and the provisions of this chapter. Any provision of the rules may be waived by the Commission on its own motion or on petition if good cause therefor is shown.

47 C.F.R. § 1.17

§ 1.17 Truthful and accurate statements to the Commission.

(a) In any investigatory or adjudicatory matter within the Commission's jurisdiction (including, but not limited to, any informal adjudication or informal investigation but excluding any declaratory ruling proceeding) and in any proceeding to amend the FM or Television Table of Allotments (with respect to expressions of interest) or any tariff proceeding, no person subject to this rule shall;

(1) In any written or oral statement of fact, intentionally provide material factual information that is incorrect or intentionally omit material information that is necessary to prevent any material factual statement that is made from being incorrect or misleading; and

* * *

(b) For purpose of paragraph (a) of this section, “persons subject to this rule” shall mean the following:

(1) Any applicant for any Commission authorization;

47 C.F.R. § 1.106

§ 1.106 Petitions for reconsideration in non-rulemaking proceedings.

* * *

(f) The petition for reconsideration and any supplement thereto shall be filed within 30 days from the date of public notice of the final Commission action, as that date is defined in § 1.4(b) of these rules, and shall be served upon parties to the proceeding. The petition for reconsideration shall not exceed 25 double spaced typewritten pages. No supplement or addition to a petition for reconsideration which has not been acted upon by the Commission or by the designated authority, filed after expiration of the 30 day period, will be considered except upon leave granted upon a separate pleading for leave to file, which shall state the grounds therefor.

47 C.F.R. § 1.1202

§ 1.1202 Definitions.

For the purposes of this subpart, the following definitions apply:

(a) Presentation. A communication directed to the merits or outcome of a proceeding, including any attachments to a written communication or documents shown in connection with an oral presentation directed to the merits or outcome of a proceeding. Excluded from this term are communications which are inadvertently or casually made, inquiries concerning compliance with procedural requirements if the procedural matter is not an area of controversy in the proceeding, statements made by decisionmakers that are limited to providing publicly available information about pending proceedings, and inquiries relating solely to the status of a proceeding, including inquiries as to the approximate time that action in a proceeding may be taken. However, a status inquiry which states or implies a view as to the merits or outcome of the proceeding or a preference for a particular party, which states why timing is important to a particular party or indicates a view as to the

date by which a proceeding should be resolved, or which otherwise is intended to address the merits or outcome or to influence the timing of a proceeding is a presentation. A communication expressing concern about administrative delay or expressing concern that a proceeding be resolved expeditiously will be treated as a permissible status inquiry so long as no reason is given as to why the proceeding should be expedited other than the need to resolve administrative delay, no view is expressed as to the merits or outcome of the proceeding, and no view is expressed as to a date by which the proceeding should be resolved. A presentation by a party in a restricted proceeding not designated for hearing requesting action by a particular date or giving reasons that a proceeding should be expedited other than the need to avoid administrative delay (and responsive presentations by other parties) may be made on an ex parte basis subject to the provisions of § 1.1204(a)(11).

(b) Ex parte presentation. Any presentation which:

- (1) If written (including electronic submissions transmitted in the form of texts, such as for internet electronic mail), is not served on the parties to the proceeding; or
- (2) If oral, is made without advance notice to the parties and without opportunity for them to be present.

47 C.F.R. § 1.1206

§ 1.1206 Permit-but-disclose proceedings.

(a) Unless otherwise provided by the Commission or the staff pursuant to § 1.1200(a), until the proceeding is no longer subject to administrative reconsideration or review or to judicial review, ex parte presentations (other than ex parte presentations exempt under § 1.1204(a)) to or from Commission decision-making personnel are permissible in the following proceedings, which are referred to as permit-but-disclose proceedings, provided that ex parte presentations to

Commission decision-making personnel are disclosed pursuant to paragraph (b) of this section:

Note 1 to paragraph (a): In the case of petitions for declaratory ruling that seek Commission preemption of state or local regulatory authority and petitions for relief under 47 U.S.C. 332(c)(7)(B)(v), the petitioner must serve the original petition on any state or local government, the actions of which are specifically cited as a basis for requesting preemption. Service should be made on those bodies within the state or local governments that are legally authorized to accept service of legal documents in a civil context. Such pleadings that are not served will be dismissed without consideration as a defective pleading and treated as a violation of the ex parte rules unless the Commission determines that the matter should be entertained by making it part of the record under § 1.1212(d) and the parties are so informed.

- (1) An informal rulemaking proceeding conducted under section 553 of the Administrative Procedure Act other than a proceeding for the allotment of a broadcast channel, upon release of a Notice of Proposed Rulemaking (see also § 1.1204(b)(2));
- (2) A proceeding involving a rule change, policy statement or interpretive rule adopted without a Notice of Proposed Rule Making upon release of the order adopting the rule change, policy statement or interpretive rule;
- (3) A declaratory ruling proceeding;
- (4) A tariff proceeding which has been set for investigation under section 204 or 205 of the Communications Act (including directly associated waiver requests or requests for special permission) (see also § 1.1204(b)(4));
- (5) Unless designated for hearing, a proceeding under section 214(a) of the Communications Act that does not also involve applications under Title III of the Communications Act (see also § 1.1208);

(6) Unless designated for hearing, a proceeding involving an application for a Cable Landing Act license that does not also involve applications under Title III of the Communications Act (see also § 1.1208);

(7) A proceeding involving a request for information filed pursuant to the Freedom of Information Act;

Note 2 to paragraph (a): Where the requested information is the subject of a request for confidentiality, the person filing the request for confidentiality shall be deemed a party.

(8) A proceeding before a Joint Board or a proceeding before the Commission involving a recommendation from a Joint Board;

(9) A proceeding conducted pursuant to section 220(b) of the Communications Act for prescription of common carrier depreciation rates upon release of a public notice of specific proposed depreciation rates (see also § 1.1204(b)(4));

(10) A proceeding to prescribe a rate of return for common carriers under section 205 of the Communications Act; and

(11) A cable rate complaint proceeding pursuant to section 623(c) of the Communications Act where the complaint is filed on FCC Form 329.

(12) [Reserved]

(13) Petitions for Commission preemption of authority to review interconnection agreements under § 252(e)(5) of the Communications Act and petitions for preemption under § 253 of the Communications Act.

Note 3 to paragraph (a): In a permit-but-disclose proceeding involving only one “party,” as defined in § 1.1202(d) of this section, the party and the Commission may freely make presentations to each other and need not comply with the disclosure requirements of paragraph (b) of this section.

(b) The following disclosure requirements apply to ex parte presentations in permit but disclose proceedings:

(1) Oral presentations. A person who makes an oral ex parte presentation subject to this section shall submit to the Commission's Secretary a memorandum that lists all persons attending or otherwise participating in the meeting at which the ex parte presentation was made, and summarizes all data presented and arguments made during the oral ex parte presentation. Memoranda must contain a summary of the substance of the ex parte presentation and not merely a listing of the subjects discussed. More than a one or two sentence description of the views and arguments presented is generally required. If the oral ex parte presentation consisted in whole or in part of the presentation of data or arguments already reflected in the presenter's written comments, memoranda or other filings in the proceeding, the presenter may provide citations to such data or arguments in his or her prior comments, memoranda, or other filings (specifying the relevant page and/or paragraph numbers where such data or arguments can be found) in lieu of summarizing them in the memorandum.

Note to paragraph (b)(1): Where, for example, presentations occur in the form of discussion at a widely attended meeting, preparation of a memorandum as specified in the rule might be cumbersome. Under these circumstances, the rule may be satisfied by submitting a transcript or recording of the discussion as an alternative to a memorandum. Likewise, Commission staff in its discretion may file an ex parte summary of a multiparty meeting as an alternative to having each participant file a summary.

(2) Written and oral presentations. A written ex parte presentation and a memorandum summarizing an oral ex parte presentation (and cover letter, if any) shall clearly identify the proceeding to which it relates, including the docket number, if any, and must be labeled as an ex parte presentation. Documents shown or given to Commission staff during ex parte meetings are

deemed to be written ex parte presentations and, accordingly, must be filed consistent with the provisions of this section. Consistent with the requirements of § 1.49 paragraphs (a) and (f), additional copies of all written ex parte presentations and notices of oral ex parte presentations, and any replies thereto, shall be mailed, e-mailed or transmitted by facsimile to the Commissioners or Commission employees who attended or otherwise participated in the presentation.

47 C.F.R. § 1.1306

§ 1.1306 Actions which are categorically excluded from environmental processing.

(a) Except as provided in § 1.1307 (c) and (d), Commission actions not covered by § 1.1307 (a) and (b) are deemed individually and cumulatively to have no significant effect on the quality of the human environment and are categorically excluded from environmental processing.

(b) Specifically, any Commission action with respect to any new application, or minor or major modifications of existing or authorized facilities or equipment, will be categorically excluded, provided such proposals do not:

- (1) Involve a site location specified under § 1.1307(a) (1)–(7), or
- (2) Involve high intensity lighting under § 1.1307(a)(8).
- (3) Result in human exposure to radiofrequency radiation in excess of the applicable safety standards specified in § 1.1307(b).

47 C.F.R. § 1.1307

§ 1.1307 Actions that may have a significant environmental effect, for which Environmental Assessments (EAs) must be prepared.

(a) Commission actions with respect to the following types of facilities may significantly affect the environment and thus require the preparation of EAs by the applicant (see §§ 1.1308 and 1.1311) and may require further Commission environmental processing (see §§ 1.1314, 1.1315 and 1.1317):

(1) Facilities that are to be located in an officially designated wilderness area.

(2) Facilities that are to be located in an officially designated wildlife preserve.

(3) Facilities that:

(i) May affect listed threatened or endangered species or designated critical habitats; or

(ii) are likely to jeopardize the continued existence of any proposed endangered or threatened species or likely to result in the destruction or adverse modification of proposed critical habitats, as determined by the Secretary of the Interior pursuant to the Endangered Species Act of 1973.

Note: The list of endangered and threatened species is contained in 50 CFR 17.11, 17.22, 222.23(a) and 227.4. The list of designated critical habitats is contained in 50 CFR 17.95, 17.96 and part 226. To ascertain the status of proposed species and habitats, inquiries may be directed to the Regional Director of the Fish and Wildlife Service, Department of the Interior.

(4) Facilities that may affect districts, sites, buildings, structures or objects, significant in American history, architecture, archeology, engineering or culture, that are listed, or are eligible for listing, in the National Register of Historic Places (see 54 U.S.C. 300308; 36 CFR parts 60 and 800), and that are subject to

review pursuant to section 1.1320 and have been determined through that review process to have adverse effects on identified historic properties.

(5) Facilities that may affect Indian religious sites.

(6) Facilities to be located in floodplains, if the facilities will not be placed at least one foot above the base flood elevation of the floodplain.

(7) Facilities whose construction will involve significant change in surface features (e.g., wetland fill, deforestation or water diversion). (In the case of wetlands on Federal property, see Executive Order 11990.)

(8) Antenna towers and/or supporting structures that are to be equipped with high intensity white lights which are to be located in residential neighborhoods, as defined by the applicable zoning law.

* * *

(c) If an interested person alleges that a particular action, otherwise categorically excluded, will have a significant environmental effect, the person shall electronically submit to the Bureau responsible for processing that action a written petition setting forth in detail the reasons justifying or circumstances necessitating environmental consideration in the decision-making process. If an interested person is unable to submit electronically or if filing electronically would be unreasonably burdensome, such person may submit the petition by mail, with a request for waiver under § 1.1304(b). (See § 1.1313). The Bureau shall review the petition and consider the environmental concerns that have been raised. If the Bureau determines that the action may have a significant environmental impact, the Bureau will require the applicant to prepare an EA (see §§ 1.1308 and 1.1311), which will serve as the basis for the determination to proceed with or terminate environmental processing.

47 C.F.R. § 1.1311

§ 1.1311 Environmental information to be included in the environmental assessment (EA).

* * *

(e) An EA need not be submitted to the Commission if another agency of the Federal Government has assumed responsibility for determining whether of the facilities in question will have a significant effect on the quality of the human environment and, if it will, for invoking the environmental impact statement process.

47 C.F.R. § 2.1

§ 2.1 Terms and definitions.

* * *

(c) The following terms and definitions are issued:

* * *

Harmful Interference. Interference which endangers the functioning of a radionavigation service or of other safety services or seriously degrades, obstructs, or repeatedly interrupts a radiocommunication service operating in accordance with [the ITU] Radio Regulations. (CS)

47 C.F.R. § 25.103

§ 25.103 Definitions.

Terms with definitions including the “(RR)” designation are defined in the same way in § 2.1 of this chapter and in the Radio Regulations of the International Telecommunication Union.

* * *

Equivalent Power Flux Density (EPFD). The sum of the power flux densities produced at a geostationary-orbit receive earth or space station on the Earth's surface or in the geostationary orbit, as

appropriate, by all the transmit stations within a non-geostationary-orbit Fixed–Satellite Service system, taking into account the off-axis discrimination of a reference receiving antenna assumed to be pointing in its nominal direction.

47 C.F.R. § 25.146

§ 25.146 Licensing and operating provisions for NGSO FSS space stations.

(a) An NGSO FSS applicant proposing to operate in the 10.7–30 GHz frequency range must certify that it will comply with:

- (1) Any applicable power flux-density levels in Article 21, Section V, Table 21–4 of the ITU Radio Regulations (incorporated by reference, § 25.108), except that in the 19.3–19.4 GHz and 19.6–19.7 GHz bands applicants must certify that they will comply with the ITU PFD limits governing NGSO FSS systems in the 17.7–19.3 GHz band; and
- (2) Any applicable equivalent power flux-density levels in Article 22, Section II, and Resolution 76 of the ITU Radio Regulations (both incorporated by reference, § 25.108).

* * *

(c) Prior to the initiation of service, an NGSO FSS operator licensed or holding a market access authorization to operate in the 10.7–30 GHz frequency range must receive a “favorable” or “qualified favorable” finding by the ITU Radiocommunication Bureau, in accordance with Resolution 85 of the ITU Radio Regulations (incorporated by reference, § 25.108), regarding its compliance with applicable ITU EPFD limits. In addition, a market access holder in these bands must:

- (1) Communicate the ITU finding to the Commission; and
- (2) Submit the input data files used for the ITU validation software.

* * *

(d) Coordination will be required between NGSO FSS systems and GSO FSS earth stations in the 10.7–12.75 GHz band when:

* * *

(2) The $EPFD_{down}$ radiated by the NGSO satellite system into the GSO specific receive earth station, either within the U.S. for domestic service or any points outside the U.S. for international service, as calculated using the ITU software for examining compliance with EPFD limits exceeds—174.5 dB(W/(m²/40kHz)) for any percentage of time for NGSO systems with all satellites only operating at or below 2500 km altitude, or—202 dB(W/(m²/40kHz)) for any percentage of time for NGSO systems with any satellites operating above 2500 km altitude.

47 C.F.R. § 25.289

§ 25.289 Protection of GSO networks by NGSO systems.

Unless otherwise provided in this chapter, an NGSO system licensee must not cause unacceptable interference to, or claim protection from, a GSO FSS or GSO BSS network. An NGSO FSS licensee operating in compliance with the applicable equivalent power flux-density limits in Article 22, Section II of the ITU Radio Regulations (incorporated by reference, § 25.108) will be considered as having fulfilled this obligation with respect to any GSO network.